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Electron microprobe mineral analyses from Carboniferous to Cretaceous igneous rocks offshore southeastern Canada and northeastern U.S.A.

G. Pe-Piper, D.J.W. Piper, and A. Imperial

2018

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2018

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Abstract

This data Open File provides tables of mineral analyses determined by electron microprobe from unique samples of igneous rocks in offshore petroleum exploration wells, mostly of Triassic and Cretaceous age, but also including some Paleozoic basement rocks and a few comparative rocks on land. Most analyses are from clinopyroxenes, amphiboles, feldspars, biotite, and olivine and their alteration products. Excel data files are provided in addition to this report.

Introduction

In the 1980's and 1990's, Dr Lubomir Jansa of the Geological Survey of Canada and Dr Georgia Pe-Piper of Saint Mary's University collaborated on studies of igneous rocks in the petroleum basins offshore southeastern Canada and some related issues. The stratigraphic, geochemical and tectonic results of these studies were published in a series of papers. Most of the original geochemical data were documented in GSC Open File 1351. Many of these samples were separated from cuttings and are unique. This present Open File tabulates all the electron microprobe analyses of minerals available from these samples, most of which were never published, or presented only in figures or as averages.

Most of the mineral analyses were performed on a Microscan 5 electron microprobe at Dalhousie University (Clarke 1976). Natural minerals and synthetic oxide standards were used for calibration, and the data were reduced using the EMPADR VII program (Rucklidge & Gasparrini 1969).

Organisation of this Open File

Tables 1 and 2 below summarize the locations of samples. Appendices 1–4 present electron microprobe analyses as follows: (1) Scotian Shelf Cretaceous; (2) Grand Banks Cretaceous; (3) US continental margin samples; (4) Canadian continental margin Triassic and Paleozoic samples. The electron microprobe analyses are also available for download as Excel files. Interspersed with the tables are sketches (where available) of the position of analyses within crystals.

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The papers listed below provide interpretations of the rocks studied and in some cases interpretations of the mineral chemistry.

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Clarke, D.B., 1976. Petrological applications of microbeam techniques. *in* Short Course in Microbeam Techniques, (D.G.W. Smith, ed.). Mineralogical Association of Canada Short Course no 1.

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Table 1. Well or location names, sample depths and lithologies of samples in this Open File

For latitude and longitude of each well or sample, see Table 2.

Regions:

Appendix 1: Scotian Shelf		***Cretaceous***
Well	**Depth (ft)/Sample**	
Hercules J-15	2460-2470	Mafic rock
	2540-2550	Mafic rock
	2590-2600	Mafic rock
Hesper I-52	8960-8970	Mafic rock
	8990-9000	Mafic rock
	9000-9010	Mafic rock
Jason C-20	4520-4530	Mafic rock
Argo F-38	3400-3410	Mafic rock

Appendix 2: Grand Banks		***Cretaceous***
Well	**Depth (ft)/Sample**	**Notes**
Brant P-87	11620	(Lower Unit) Mafic rock
	11700	(Lower Unit) Mafic rock
	10310	(Lower Unit) Mafic rock
	9360	(Upper Unit) Mafic rock
	10280	Felsic rock
	11050	Felsic rock
	11060	Felsic rock
	11070	Felsic rock
	11080	Felsic rock
Emerillon G-56	9750	Mafic rock
	9800	Mafic rock
	9810	Mafic rock
	9820	Mafic rock
Twillick G-49	4230	Mafic rock
	4240	Mafic rock
	4260	Mafic rock
Mallard M-45	8310	Felsic rock
	8546	Felsic rock
	8660	Felsic rock

Appendix 3: US continental margin

	Sample	Notes
Seabrook Station, New Hampshire	B1	Triassic dike (Bellini et al. 1982)

Baltimore Canyon		***Cretaceous***
Well	**Depth (ft)/Sample**	**Notes**
Mobil 544-1 well	9970	mafic

New England Seamounts		***Cretaceous***
Site	**Depth (cm)/Sample**	**Notes**
Leg 43 DSDP Site 382-25-2	96-98	
(Nashville Seamount)	105-107	Hyaloclastite
	105-107	Basanite clast in hyaloclastite
	107-109	Hyaloclastite and basanite
Leg 43 DSDP Site 385-23-1 (Vogel Seamount)	97-99	Vesicular lava

Appendix 4: Triassic and Paleozoic rocks, Canadian continental margin

Well/ location of outcrops	**Depth (ft)/Sample**	**Notes**
Cormorant N-83 well	9750	Triassic lava
	9760	Triassic lava
	9770	Triassic lava
	9780	Triassic lava
Spoonbill C-30 well	8467	Triassic lava
Glooscap C-63 well	4551	Triassic lava
Mohawk B-93 well	6920	?Devonian granodiorite
	6940	?Devonian granodiorite
	6941	?Devonian granodiorite
	6970	?Devonian granodiorite
Ojibwa E-07 well	7500	Late Devonian leucogranodiorite
Northumberland Strait F-25 well	8862	Upper Unit, ?Triassic, ?Devonian-Carboniferous mafic
	8893	Upper Unit, ?Triassic, ?Devonian-Carboniferous mafic

Northumberland Strait F-25 well	9450	Lower Unit, Devonian-Carboniferous mafic
Crow F-52 well	4690	Carboniferous tonalite
	4880	Carboniferous tonalite
German Bank 76016-14	15-34 cm	Carboniferous-Permian granite
German Bank 76016-17	11-25 cm	Carboniferous-Permian granite
German Bank 76016-20	240-250 cm	Carboniferous-Permian granite
	73-92 cm	Carboniferous-Permian granite
Barrington Passage Pluton	90-BP-Y20	Late Devonian tonalite
Wedgeport Pluton	90-WP-Y8B	Earliest Carboniferous monzogranite

Table 2. Well location summary.

Sample	Location	Latitude	Longitude
Argo F-58	Scotian Basin	45.456	-58.840
Crow F-52	Scotian Basin	45.357	-59.140
Glooscap C-63	Scotian Basin	43.203	-62.166
Hercules J-15	Scotian Basin	45.572	-58.787
Hesper I-52	Scotian Basin	44.695	-57.876
Jason C-20	Scotian Basin	45.485	-58.541
Mohawk B-93	Scotian Basin	42.703	-64.731
Ojibwa E-07	Scotian Basin	43.772	-61.770
Brant P-87	Grand Bank	44.283	-52.705
Cormorant N-83	Grand Bank	46.046	-48.967
Emerillon C-56	Grand Bank	45.251	-54.388
Mallard M-45	Grand Bank	44.246	-52.123
Spoonbill C-30	Grand Bank	45.818	-49.068
Twillick G-49	Grand Bank	44.307	-51.359
Northumberland Strait F-25	Gulf of St. Lawrence	46.074	-62.063
Mobil 544-1	Baltimore Canyon	39.416	-73.101
DSDP 382	Nashville Seamount	34.417	-56.538
DSDP 385	Vogel Seamount	37.370	-60.158
Y8	Wedgeport	43.754	-66.007
Y20	Barrington Passage	43.506	-65.736
B1	Seabrook NH	42.899	-70.849
76-016-14	German Bank	42.950	-66.215
76-016-17	German Bank	43.513	-66.383
76-016-20	German Bank	43.358	-66.487
76-016-21	German Bank	43.252	-66.517

Appendix 1: Scotian Shelf Cretaceous

Table 1-1. Electron microprobe chemical analyses of Olivine in the Scotian Shelf (Orpheous Graben).

Well	Depth (top)	Sample (pts)	File*	Mineral	SiO_2	TiO_2	Al_2O_3	Cr_2O_3	FeO	MnO	MgO	CaO	Na_2O	K_2O	Total
Hercules J-15	2540.00	HERC2540-2550	New Entry	Olivine	36.42	0.00	0.06		38.20	0.60	27.53	0.41	0.05	0.00	103.27
Hercules J-15	2540.00	HERC2540-2550	New Entry	Olivine	34.70	0.00	0.00		45.36	0.84	21.65	0.30	0.00	0.00	102.85
Hercules J-15	2540.00	HERC2540-2550	New Entry	Olivine	33.40	0.00	0.00		45.64	0.94	21.64	0.34	0.05	0.00	102.01
Hercules J-15	2540.00	HERC2540-2550	New Entry	Olivine	36.14	0.09	0.13		37.97	0.63	27.12	0.43	0.00	0.00	102.51
Hercules J-15	2540.00	HERC2540-2550	New Entry	Olivine	34.77	0.00	0.07		44.87	1.11	21.67	0.40	0.12	0.00	103.01
Hercules J-15	2540.00	HERC2540-2550	New Entry	Olivine	33.68	0.06	0.19		45.18	0.81	22.17	0.42	0.09	0.00	102.60
Hercules J-15	2590.00	HERC2590-2600	New Entry	Olivine	35.79	0.05	0.17		38.43	0.78	25.89	0.42	0.29	0.00	101.82
Hercules J-15	2590.00	HERC2590-2600	New Entry	Olivine	35.96	0.00	0.11		41.87	0.74	24.25	0.43	0.25	0.00	103.61
Hercules J-15	2590.00	HERC2590-2600	New Entry	Olivine	37.23	0.00	0.18		33.77	0.55	30.68	0.41	0.24	0.00	103.06
Hercules J-15	2590.00	HERC2590-2600	New Entry	Olivine	36.04	0.00	0.26		40.97	0.87	25.19	0.47	0.21	0.00	104.01
Hercules J-15	2590.00	HERC2590-2600	New Entry	Olivine	36.21	0.12	0.21		42.01	0.83	24.14	0.42	0.31	0.06	104.31

* all data can be found under Archiving - Minfiles - **File*** *name* **pts** = polished thin section

Table 1-2. Electron microprobe chemical analyses of clinopyroxene in the Scotian Shelf (Orpheus Graben).

Well	Depth (top)	Sample (pts)	File*	Mineral	SiO_2	TiO_2	Al_2O_3	Cr_2O_3	FeO	MnO	MgO	CaO	Na_2O	K_2O	Total	Notes
Hercules J-15	2540.00	HERC2540-2550	PX2	Clinopyroxene	45.96	3.49	5.47		11.56	0.20	11.67	20.58	0.35		99.28	
Hercules J-15	2540.00	HERC2540-2550	PX2	Clinopyroxene	45.67	3.82	5.45		11.29	0.24	11.55	20.71	0.34		99.07	
Hercules J-15	2540.00	HERC2540-2550	PX2	Clinopyroxene	47.18	3.15	4.77		11.14	0.20	11.99	20.58	0.39		99.40	
Hercules J-15	2540.00	HERC2540-2550	PX2	Clinopyroxene	48.16	2.70	3.93		10.57	0.34	12.26	20.76	0.37		99.09	
Hercules J-15	2540.00	HERC2540-2550	PX2	Clinopyroxene	47.95	2.55	3.79		11.28	0.31	12.74	20.47	0.46		99.55	
Hercules J-15	2540.00	HERC2540-2550	PX2	Clinopyroxene	47.32	2.62	4.42		10.97	0.16	12.23	20.62	0.27		98.61	
Hercules J-15	2540.00	HERC2540-2550	PX2	Clinopyroxene	47.02	2.83	4.34		10.35	0.18	12.21	21.08	0.20		98.21	
Hercules J-16	2541.00	HERC2540-2550	New Entry	Clinopyroxene	46.98	3.14	4.68		11.17	0.26	12.04	20.62	0.38		99.27	Average
Hercules J-15	2590.00	HERC2590-2600	PX2	Clinopyroxene	49.39	2.26	3.45		10.98	0.31	12.75	21.06	0.59		100.79	
Hercules J-15	2590.00	HERC2590-2600	PX2	Clinopyroxene	48.57	2.50	4.11		10.53	0.29	12.81	21.37	0.56		100.74	
Hercules J-15	2590.00	HERC2590-2600	PX2	Clinopyroxene	47.08	3.18	5.56		10.72	0.29	12.48	20.98	0.75		101.04	
Hercules J-15	2590.00	HERC2590-2600	PX2	Clinopyroxene	47.38	2.61	4.90		10.34	0.18	12.35	21.34	0.48		99.58	
Hercules J-15	2590.00	HERC2590-2600	PX2	Clinopyroxene	47.94	2.51	4.56		10.37	0.19	12.67	21.13	0.44		99.81	
Hercules J-15	2590.00	HERC2590-2600	PX2	Clinopyroxene	47.00	3.34	4.36		11.55	0.31	11.94	20.78	0.50		99.78	
Hercules J-15	2590.00	HERC2590-2600	PX2	Clinopyroxene	47.45	3.02	4.72		10.90	0.21	12.16	21.06	0.52		100.04	
Hercules J-15	2590.00	HERC2590-2600	New Entry	Clinopyroxene	47.96	2.71	4.35		10.78	0.25	12.45	21.12	0.52		100.14	Average
Hesper I-52	8960.00	HES8960-8970	New Entry	Clinopyroxene	47.11	2.66	3.74		11.99	0.17	12.14	20.61	0.50		98.92	
Hesper I-52	8960.00	HES8960-8970	New Entry	Clinopyroxene	46.73	3.21	4.46		11.51	0.21	11.86	21.13	0.55		99.66	
Hesper I-52	8960.00	HES8960-8970	New Entry	Clinopyroxene	46.99	2.87	4.07		11.53	0.25	12.23	21.19	0.52		99.65	
Hesper I-52	8960.00	HES8960-8970	New Entry	Clinopyroxene	46.57	3.14	4.28		11.18	0.21	12.27	21.33	0.52		99.50	
Hesper I-52	8960.00	HES8960-8970	New Entry	Clinopyroxene	46.28	3.22	4.59		11.67	0.22	12.19	20.95	0.52		99.64	
Hesper I-52	8960.00	HES8960-8970	New Entry	Clinopyroxene	46.18	3.62	4.88		11.46	0.29	12.06	21.41	0.70		100.60	
Hesper I-52	8960.00	HES8960-8970	New Entry	Clinopyroxene	48.13	3.21	4.46		11.47	0.24	12.12	21.20	0.56		99.81	Average
Hesper I-52	8990.00	HES8990-9000	New Entry	Clinopyroxene	48.38	2.16	2.92		11.78	0.14	12.32	20.78	0.48		98.96	
Hesper I-52	8990.00	HES8990-9000	New Entry	Clinopyroxene	49	1.88	2.64		12.71	0.25	12.31	21.08	0.52		100.39	
Hesper I-52	8990.00	HES8990-9000	New Entry	Clinopyroxene	46.93	2.96	4.38		10.66	0.18	12.81	20.78	0.53		99.23	
Hesper I-52	8990.00	HES8990-9000	New Entry	Clinopyroxene	48.96	1.78	2.41		12.84	0.16	12.4	20.61	0.51		99.67	
Hesper I-52	8990.00	HES8990-9000	New Entry	Clinopyroxene	47.88	2.41	3.49		11.4	0.14	12.82	20.59	0.4		99.13	
Hesper I-52	8990.00	HES8990-9000	New Entry	Clinopyroxene	47.68	2.56	3.66		11.3	0.35	12.76	20.69	0.57		99.57	
Hesper I-52	8990.00	HES8990-9000	New Entry	Clinopyroxene	46.25	3.29	4.74		10.78	0.24	12.36	21.29	0.55		99.5	
Hesper I-53	8990.00	HES8990-9000	New Entry	Clinopyroxene	50.19	1.42	1.74		12.07	0.39	13.64	20.66	0.6		100.71	Average
Hesper I-52	8990.00	HES8990-9000	New Entry	Clinopyroxene	48.22	2.29	3.4		11.95	0.23	12.23	21.22	0.51		100.05	
Jason C-20	4520.00	JAS4520-4530	PX2	Clinopyroxene	47.08	3.13	4.50		10.79	0.20	11.90	20.65	0.43		98.68	
Jason C-20	4520.00	JAS4520-4530	PX2	Clinopyroxene	47.89	2.45	3.54		10.95	0.23	12.71	20.83	0.54		99.14	
Jason C-20	4520.00	JAS4520-4530	PX2	Clinopyroxene	47.19	2.48	3.55		12.33	0.21	12.30	20.39	0.49		98.94	
Jason C-20	4520.00	JAS4520-4530	PX2	Clinopyroxene	48.10	2.32	3.56		11.80	0.21	12.19	20.04	0.53		98.75	
Jason C-20	4520.00	JAS4520-4530	PX2	Clinopyroxene	48.62	2.17	3.53		10.14	0.26	12.56	20.81	0.43		98.52	
Jason C-20	4520.00	JAS4520-4530	New Entry	Clinopyroxene	46.55	3.21	4.46		11.47	0.24	12.12	21.20	0.56		99.81	Average
Argo F-38	3400.00	ARG3400-3410	PX2	Clinopyroxene	47.01	3.54	4.78		11.61	0.14	12.19	21.07	0.40		100.74	
Argo F-38	3400.00	ARG3400-3410	PX2	Clinopyroxene	49.30	2.25	3.57		11.38	0.29	12.95	21.33	0.51		101.58	
Argo F-38	3400.00	ARG3400-3410	PX2	Clinopyroxene	48.41	2.44	3.79		11.49	0.14	12.73	21.50	0.49		100.99	
Argo F-38	3400.00	ARG3400-3410	PX2	Clinopyroxene	49.17	2.30	3.23		10.50	0.00	13.02	21.48	0.29		99.99	

Table 1-2. Electron microprobe chemical analyses of clinopyroxene in the Scotian Shelf (Orpheus Graben).

Well	Depth (top)	Sample (pts)	File*	Mineral	SiO_2	TiO_2	Al_2O_3	Cr_2O_3	FeO	MnO	MgO	CaO	Na_2O	K_2O	Total	Notes
Argo F-38	3400.00	ARG3400-3410	PX2	Clinopyroxene	48.03	2.97	4.00		10.96	0.21	12.76	21.54	0.52		100.99	
Argo F-38	3400.00	ARG3400-3410	PX2	Clinopyroxene	50.65	1.55	1.60		11.92	0.28	14.13	20.88	0.25		101.26	
Argo F-38	3400.00	ARG3400-3410	PX2	Clinopyroxene	48.80	2.20	2.66		13.28	0.36	11.49	21.05	0.60		100.44	
Argo F-38	3400.00	ARG3400-3410	PX2	Clinopyroxene	45.94	4.08	4.57		12.71	0.14	12.13	20.52	0.53		100.62	
Argo F-38	3400.00	ARG3400-3410	New Entry	Clinopyroxene	47.89	2.92	3.84		11.76	0.21	12.39	21.19	0.47		100.67	Average
Argo F-38	3410.00	ARG3410-3415	PX2	Clinopyroxene	47.69	2.63	3.98		10.61	0.20	12.97	21.55	0.48		100.11	
Argo F-38	3410.00	ARG3410-3415	PX2	Clinopyroxene	48.56	2.39	3.29		13.22	0.28	11.88	20.83	0.58		101.03	
Argo F-38	3410.00	ARG3410-3415	PX2	Clinopyroxene	48.46	2.37	3.42		11.20	0.13	12.49	21.54	0.46		100.07	
Argo F-38	3410.00	ARG3410-3415	PX2	Clinopyroxene	48.17	1.76	2.91		12.78	0.29	11.58	20.97	0.53		98.99	
Argo F-38	3410.00	ARG3410-3415	New Entry	Clinopyroxene	47.78	2.51	3.74		11.20	0.22	12.33	20.54	0.48		98.80	Average

* all data can be found under Archiving - Minfiles - **File*** *name* **pts** = polished thin section

Table 1-3. Electron microprobe chemical analyses of feldspar in the Scotian Shelf (Orpheus Graben).

Well	Depth (top)	Sample (pts)	File*	Mineral	SiO_2	TiO_2	Al_2O_3	Cr_2O_3	FeO	MnO	MgO	CaO	Na_2O	K_2O	Total	Notes
Hercules J-15	2460.00	HERC2460-2470	New Entry	Feldspar	63.47	0.00	18.04		0.00	0.00	0.00	0.00	0.26	15.71	97.48	
Hercules J-15	2460.00	HERC2460-2470	New Entry	Feldspar	63.48	0.00	18.27		0.19	0.00	0.00	0.00	0.51	15.68	98.13	
Hercules J-15	2460.00	HERC2460-2470	New Entry	Feldspar	54.39	0.00	31.24		0.67	0.00	0.16	13.14	4.41	0.36	104.37	
Hercules J-15	2460.00	HERC2460-2470	New Entry	Feldspar	52.93	0.22	29.12		0.94	0.06	0.20	12.50	4.22	0.39	100.58	
Hercules J-15	2460.00	HERC2460-2470	New Entry	Feldspar	52.28	0.29	29.40		0.74	0.00	0.20	12.86	4.08	0.40	100.25	
Hercules J-15	2460.00	HERC2460-2470	New Entry	Feldspar	53.03	0.14	29.50		0.70	0.00	0.10	12.48	4.29	0.40	100.64	
Hercules J-15	2460.00	HERC2460-2470	New Entry	Feldspar	55.99	0.25	25.98		0.77	0.00	0.12	9.05	5.60	0.86	98.62	
Hercules J-15	2460.00	HERC2460-2470	New Entry	Feldspar	52.28	0.29	29.40		0.74	0.00	0.20	12.86	4.08	0.40	100.25	
Hercules J-15	2460.00	HERC2460-2470	New Entry	Feldspar	63.48	0.00	18.27		0.19	0.00	0.00	0.00	0.51	15.68	98.13	xtal in contact btw an ign and sst clast
Hercules J-15	2540.00	HERC2540-2550	New Entry	Feldspar	52.78	0.00	28.49		0.68	0.00	0.00	12.29	4.34	0.47	99.05	
Hercules J-15	2540.00	HERC2540-2550	New Entry	Feldspar	51.86	0.17	29.49		0.80	0.00	0.08	13.02	4.08	0.43	99.93	
Hercules J-15	2540.00	HERC2540-2550	New Entry	Feldspar	64.30	0.07	20.30		0.31	0.00	0.00	2.04	6.89	5.48	99.39	
Hercules J-15	2540.00	HERC2540-2550	New Entry	Feldspar	62.99	0.22	20.89		0.40	0.00	0.00	2.72	7.16	4.21	98.59	
Hercules J-15	2540.00	HERC2540-2550	New Entry	Feldspar	64.60	0.08	18.96		0.40	0.00	0.00	0.84	5.54	8.00	98.42	
Hercules J-15	2540.00	HERC2540-2550	New Entry	Feldspar	53.31	0.06	29.03		0.73	0.00	0.00	12.09	4.45	0.35	100.02	
Hercules J-15	2540.00	HERC2540-2550	New Entry	Feldspar	62.07	0.00	22.31		0.47	0.00	0.00	3.67	7.46	3.28	99.26	
Hercules J-15	2540.00	HERC2540-2550	New Entry	Feldspar	53.31	0.06	29.03		0.73	0.00	0.00	12.09	4.45	0.35	100.02	
Hercules J-15	2540.00	HERC2540-2550	New Entry	Feldspar	51.86	0.17	29.49		0.80	0.00	0.08	13.02	4.08	0.43	99.93	
Hercules J-15	2540.00	HERC2540-2550	New Entry	Feldspar	64.60	0.08	18.96		0.40	0.00	0.00	0.84	5.54	8.00	98.42	
Hercules J-15	2540.00	HERC2540-2550	New Entry	Feldspar	62.07	0.00	22.31		0.47	0.00	0.00	3.67	7.46	3.28	99.26	
Hercules J-15	2590.00	HERC2590-2600	New Entry	Feldspar	53.56	0.11	28.85		0.76	0.00	0.16	12.09	4.49	0.36	100.38	fresh
Hercules J-15	2590.00	HERC2590-2600	New Entry	Feldspar	55.05	0.25	32.55		0.70	0.04	0.17	13.80	4.38	0.27	107.21	
Hercules J-15	2590.00	HERC2590-2600	New Entry	Feldspar	52.53	0.00	29.23		0.77	0.00	0.13	12.55	4.13	0.33	99.67	fresh
Hercules J-15	2590.00	HERC2590-2600	New Entry	Feldspar	55.31	0.06	31.89		0.74	0.08	0.08	13.13	4.41	0.25	105.95	
Hercules J-15	2590.00	HERC2590-2600	New Entry	Feldspar	52.87	0.11	28.71		0.69	0.00	0.12	12.31	4.35	0.42	99.58	fresh
Hercules J-15	2590.00	HERC2590-2600	New Entry	Feldspar	54.53	0.00	31.33		0.75	0.00	0.00	13.15	4.29	0.19	104.24	
Hercules J-15	2590.00	HERC2590-2600	New Entry	Feldspar	52.24	0.24	29.54		0.74	0.00	0.19	13.00	4.10	0.38	100.43	fresh
Hercules J-15	2590.00	HERC2590-2600	New Entry	Feldspar	53.09	0.15	28.82		0.65	0.00	0.12	12.38	4.19	0.38	99.78	little altered
Hercules J-15	2590.00	HERC2590-2600	New Entry	Feldspar	53.32	0.12	28.79		0.79	0.00	0.10	12.32	4.37	0.38	100.19	little altered
Hercules J-15	2590.00	HERC2590-2600	New Entry	Feldspar	51.35	0.28	27.85		3.31	0.00	1.09	11.58	4.08	0.36	99.90	little altered
Hercules J-15	2590.00	HERC2590-2600	New Entry	Feldspar	57.19	0.12	25.95		0.81	0.00	0.15	8.82	5.97	0.82	99.83	little altered
Hercules J-15	2590.00	HERC2590-2600	New Entry	Feldspar	64.69	0.00	19.48		0.36	0.00	0.07	0.93	5.76	7.20	98.49	little altered
Hercules J-15	2590.00	HERC2590-2600	New Entry	Feldspar	56.60	0.00	26.62		0.78	0.00	0.12	9.50	5.55	0.77	99.94	little altered
Hercules J-15	2590.00	HERC2590-2600	New Entry	Feldspar	52.50	0.08	29.27		0.65	0.00	0.18	12.94	4.08	0.37	100.07	a lot of alteration
Hercules J-15	2590.00	HERC2590-2600	New Entry	Feldspar	53.15	0.19	28.57		0.71	0.12	0.19	12.14	4.39	0.45	99.91	a lot of alteration
Hercules J-15	2590.00	HERC2590-2600	New Entry	Feldspar	53.75	0.00	27.68		0.94	0.00	0.18	11.29	4.67	0.47	98.98	a lot of alteration
Hercules J-15	2590.00	HERC2590-2600	New Entry	Feldspar	57.25	0.23	26.17		0.71	0.10	0.14	9.04	5.97	0.91	100.52	little altered
Hercules J-15	2590.00	HERC2590-2600	New Entry	Feldspar	54.19	0.00	27.60		0.80	0.00	0.25	11.05	4.95	0.56	99.40	little altered
Hercules J-15	2590.00	HERC2590-2600	New Entry	Feldspar	57.25	0.23	26.17		0.71	0.00	0.14	9.04	5.97	0.91	100.42	
Hercules J-15	2590.00	HERC2590-2600	New Entry	Feldspar	52.50	0.08	29.27		0.65	0.00	0.18	12.94	4.08	0.37	100.07	
Hercules J-15	2590.00	HERC2590-2600	New Entry	Feldspar	64.69	0.00	19.48		0.36	0.00	0.07	0.93	5.76	7.20	98.49	
Hesper I-52	8960.00	HES8960-8970	New Entry	Feldspar	54.73	0.21	26.55		1.11	0.00	0.00	10.00	5.34	0.62	98.56	alt
Hesper I-52	8960.00	HES8960-8970	New Entry	Feldspar	56.64	0.28	26.01		0.90	0.00	0.00	9.06	6.17	0.47	99.53	alt
Hesper I-52	8960.00	HES8960-8970	New Entry	Feldspar	54.41	0.12	27.95		0.87	0.00	0.00	11.15	4.93	0.43	99.86	half alt
Hesper I-52	8960.00	HES8960-8970	New Entry	Feldspar	53.96	0.12	28.24		0.89	0.00	0.26	11.30	4.99	0.38	100.14	half alt
Hesper I-52	8960.00	HES8960-8970	New Entry	Feldspar	54.57	0.06	27.34		0.96	0.00	0.11	10.65	5.10	0.65	99.44	alt

Table 1-3. Electron microprobe chemical analyses of feldspar in the Scotian Shelf (Orpheus Graben).

Well	Depth (top)	Sample (pts)	File*	Mineral	SiO_2	TiO_2	Al_2O_3	Cr_2O_3	FeO	MnO	MgO	CaO	Na_2O	K_2O	Total	Notes
Hesper I-52	8960.00	HES8960-8970	New Entry	Feldspar	55.81	0.37	27.10		1.14	0.00	0.11	10.08	5.53	0.70	100.84	alt
Hesper I-52	8960.00	HES8960-8970	New Entry	Feldspar	56.51	0.06	26.61		1.15	0.00	0.21	9.63	5.66	0.56	100.39	alt
Hesper I-52	8960.00	HES8960-8970	New Entry	Feldspar	53.68	0.18	28.66		0.77	0.00	0.13	11.80	4.72	0.30	100.24	fresh
Hesper I-52	8960.00	HES8960-8970	New Entry	Feldspar	56.16	0.19	26.60		0.50	0.00	0.06	9.33	5.73	0.53	99.10	fresh
Hesper I-52	8960.00	HES8960-8970	New Entry	Feldspar	53.17	0.00	28.77		1.43	0.00	0.29	11.69	4.42	0.33	100.10	fresh
Hesper I-52	8960.00	HES8960-8970	New Entry	Feldspar	54.05	0.12	28.31		0.82	0.00	0.00	11.36	4.79	0.37	99.82	fresh
Hesper I-52	8960.00	HES8960-8970	New Entry	Feldspar	54.20	0.19	28.25		1.00	0.00	0.10	11.53	4.85	0.36	100.48	fresh
Hesper I-52	8960.00	HES8960-8970	New Entry	Feldspar	55.85	0.28	27.12		1.11	0.00	0.18	10.14	5.71	0.47	100.86	alt
Hesper I-52	8960.00	HES8960-8970	New Entry	Feldspar	55.00	0.15	27.87		0.92	0.00	0.15	10.76	5.35	0.31	100.51	alt
Hesper I-52	8960.00	HES8960-8970	New Entry	Feldspar	56.64	0.28	26.01		0.90	0.00	0.00	9.06	6.17	0.47	99.53	
Hesper I-52	8960.00	HES8960-8970	New Entry	Feldspar	53.17	0.00	28.77		1.43	0.00	0.29	11.69	4.42	0.33	100.10	
Hesper I-52	8990.00	HES8990-9000	New Entry	Feldspar	56.41	0.14	25.66		0.70	0.00	0.00	8.77	5.59	0.66	97.93	
Hesper I-52	8990.00	HES8990-9000	New Entry	Feldspar	51.88	0.08	29.55		0.81	0.00	0.11	13.16	3.73	0.24	99.56	
Hesper I-52	8990.00	HES8990-9000	New Entry	Feldspar	54.17	0.00	28.96		0.78	0.07	0.09	11.97	4.66	0.37	101.07	
Hesper I-52	8990.00	HES8990-9000	New Entry	Feldspar	63.13	0.00	19.58		0.17	0.00	0.00	1.66	5.54	6.79	96.87	
Hesper I-52	8990.00	HES8990-9000	New Entry	Feldspar	54.47	0.09	26.70		0.67	0.00	0.06	10.49	4.86	0.58	97.92	
Hesper I-52	8990.00	HES8990-9000	New Entry	Feldspar	56.35	0.00	30.34		0.75	0.00	0.00	11.97	4.72	0.40	104.53	High total
Hesper I-52	9000.00	HES9000-9010	New Entry	Feldspar	52.77	0.16	28.97		0.00	0.00	0.63	10.87	4.52	1.05	98.97	almost fresh
Hesper I-52	9000.00	HES9000-9010	New Entry	Feldspar	59.44	0.24	25.24		0.00	0.00	0.07	7.57	6.83	0.77	100.16	almost fresh
Hesper I-52	9000.00	HES9000-9010	New Entry	Feldspar	57.58	0.20	26.57		0.00	0.00	0.09	8.94	6.12	0.60	100.10	almost fresh
Hesper I-52	9000.00	HES9000-9010	New Entry	Feldspar	52.52	0.08	29.97		0.00	0.00	0.12	13.31	3.93	0.27	100.20	fresh
Hesper I-52	9000.00	HES9000-9010	New Entry	Feldspar	53.51	0.00	28.76		0.00	0.00	0.11	11.82	4.61	0.40	99.21	fresh
Hesper I-52	9000.00	HES9000-9010	New Entry	Feldspar	54.84	0.23	28.30		0.00	0.00	0.15	11.26	5.11	0.36	100.25	fresh
Hesper I-52	9000.00	HES9000-9010	New Entry	Feldspar	57.95	0.00	26.24		0.00	0.00	0.00	8.44	6.43	0.59	99.65	fresh
Hesper I-52	9000.00	HES9000-9010	New Entry	Feldspar	64.15	0.00	21.02		0.00	0.00	0.00	2.65	7.36	4.29	99.47	fresh
Hesper I-52	9000.00	HES9000-9010	New Entry	Feldspar	54.83	0.18	28.13		0.00	0.00	0.14	11.01	5.12	0.29	99.70	fresh
Hesper I-52	9000.00	HES9000-9010	New Entry	Feldspar	54.42	0.17	28.09		0.00	0.00	0.17	11.32	4.85	0.39	99.41	fresh
Hesper I-52	9000.00	HES9000-9010	New Entry	Feldspar	60.27	0.00	24.50		0.00	0.00	0.18	6.59	7.26	1.19	99.99	fresh / duplicate
Hesper I-52	9000.00	HES9000-9010	New Entry	Feldspar	60.27	0.00	24.50		0.54	0.00	0.18	6.59	7.26	1.19	100.53	duplicate
Hesper I-52	9000.00	HES9000-9010	New Entry	Feldspar	52.52	0.08	29.97		0.76	0.00	0.12	13.31	3.93	0.27	100.96	
Hesper I-52	9000.00	HES9000-9010	New Entry	Feldspar	64.15	0.00	21.02		0.23	0.00	0.00	2.65	7.36	4.29	99.70	
Jason C-20	4520.00	JAS4520-4530	New Entry	Feldspar	58.71	0.27	25.20		0.68	0.00	0.11	7.46	6.80	1.17	100.40	
Jason C-20	4520.00	JAS4520-4530	New Entry	Feldspar	64.64	0.09	19.82		0.42	0.00	0.00	1.34	6.31	6.32	98.94	
Jason C-20	4520.00	JAS4520-4530	New Entry	Feldspar	61.46	0.30	25.63		0.46	0.00	0.00	6.93	7.21	1.25	103.24	
Jason C-20	4520.00	JAS4520-4530	New Entry	Feldspar	54.19	0.00	28.77		0.85	0.00	0.11	11.64	4.81	0.36	100.73	
Jason C-20	4520.00	JAS4520-4530	New Entry	Feldspar	54.35	0.07	31.11		0.60	0.00	0.09	12.87	4.58	0.30	103.97	
Jason C-20	4520.00	JAS4520-4530	New Entry	Feldspar	53.94	0.00	28.15		0.76	0.00	0.00	11.67	4.64	0.46	99.62	
Jason C-20	4520.00	JAS4520-4530	New Entry	Feldspar	56.21	0.00	27.53		0.83	0.00	0.09	10.07	5.79	0.56	101.08	
Jason C-20	4520.00	JAS4520-4530	New Entry	Feldspar	53.80	0.16	29.58		0.79	0.00	0.07	12.05	4.51	0.36	101.32	
Jason C-20	4520.00	JAS4520-4530	New Entry	Feldspar	58.71	0.27	25.20		0.68	0.00	0.11	7.46	6.80	1.17	100.40	
Jason C-20	4520.00	JAS4520-4530	New Entry	Feldspar	53.94	0.00	28.15		0.76	0.00	0.00	11.67	4.64	0.46	99.62	
Jason C-20	4520.00	JAS4520-4530	New Entry	Feldspar	64.64	0.09	19.82		0.42	0.00	0.00	1.34	6.31	6.32	98.94	

* all data can be found under Archiving - Minfiles - **File*** *name* **pts** = polished thin section

Table 1-4. Electron microprobe chemical analyses of amphibole and biotite in the Scotian Shelf (Orpheus Graben).

Well	Depth (top)	Sample (pts)	File*	Mineral	SiO_2	TiO_2	Al_2O_3	Cr_2O_3	FeO	MnO	MgO	CaO	Na_2O	K_2O	Total	Notes
Jason C-20	4520.00	JAS4520-4530	New Entry	Amphibole	44.99	2.56	6.83		13.60	0.25	14.50	10.94	3.06	1.30	98.03	
Hercules J-15	2540.00	HERC2540-2550	New Entry	Biotite	39.33	4.87	12.22		13.29	0.00	16.78	0.05	0.75	9.17	96.46	
Hercules J-15	2540.00	HERC2540-2550	New Entry	Biotite	38.75	5.27	11.95		13.09	0.00	16.61	0.00	0.65	8.63	94.95	
Hercules J-15	2540.00	HERC2540-2550	New Entry	Biotite	39.38	4.52	11.23		11.80	0.00	17.58	0.00	0.73	8.90	94.14	
Hesper I-52	8960.00	HES8990-9000	New Entry	Biotite	38.95	3.31	12.54		14.99	0.08	17.21	0.06	0.86	9.25	97.25	
Argo F-38	3400.00	ARG3400-3410	New Entry	Biotite	39.64	5.11	11.76		14.97	0.06	16.58	0.00	0.82	8.77	97.71	alt, brown

* all data can be found under Archiving - Minfiles - **File*** *name* **pts** = polished thin section

Table 1-5. Electron microprobe chemical analyses of glass and very fine grained chips in the Scotian Shelf (Orpheus Graben).

Well	Depth (top)	Sample (pts)	File*	Mineral	SiO_2	TiO_2	Al_2O_3	Cr_2O_3	FeO	MnO	MgO	CaO	Na_2O	K_2O	Cl	Total	Notes
Jason C-20	4530.00	JAS4530	New Entry	Brown glass	26.23	0.67	11.22		16.10	0.05	2.09	0.40	0.14	0.11	0.94	57.95	brown glass
Jason C-20	4530.00	JAS4530	New Entry	Brown glass	36.90	0.65	15.45		26.18	0.00	3.78	0.56	0.26	0.18	0.08	84.04	brown glass
Argo F-38	3400.00	ARG3400-3410	New Entry	Mix	44.40	1.15	19.47		7.73	0.32	1.40	0.59	0.52	2.59		78.17	?sandstone
Argo F-38	3400.00	ARG3400-3410	New Entry	Illite +	53.24	2.37	16.20		0.36	0.00	0.10	2.19	1.48	9.89		85.83	very fined-grained chip
Argo F-38	3400.00	ARG3400-3410	New Entry	Illite +	52.53	1.13	15.50		0.39	0.00	0.06	1.94	1.34	10.38		83.27	very fined-grained chip

* all data can be found under Archiving - Minfiles - **File*** *name* **pts** = polished thin section

Table 1-6. Electron microprobe chemical analyses of minerals produced by alteration (high and low temperature) of various minerals (olivine, clinopyroxene, biotite, etc.)

Well	Depth (top)	Sample (feet)	File*	Mineral	SiO_2	TiO_2	Al_2O_3	Cr_2O_3	FeO	MnO	MgO	CaO	Na_2O	K_2O	Total	Notes
Hercules J-15	2460.00	HERC2460-2470	New Entry	Alt. product	31.36	0.43	11.38		27.59	0.34	10.41	1.43	0.33	0.04	83.31	
Hercules J-15	2460.00	HERC2460-2470	New Entry	Alt. product	30.58	0.58	12.17		29.02	0.48	8.69	0.89	0.64	0.11	83.16	
Hercules J-15	2460.00	HERC2460-2470	New Entry	Alt. product	36.66	0.22	9.90		20.35	0.19	13.72	0.71	0.36	0.09	82.20	
Hercules J-15	2460.00	HERC2460-2470	New Entry	Alt. product	37.02	0.00	9.86		18.04	0.06	14.05	1.55	0.30	0.07	80.95	
Hercules J-15	2460.00	HERC2460-2470	New Entry	Alt. product	38.47	0.00	7.06		19.11	0.22	13.51	0.76	0.34	0.13	79.60	
Hercules J-15	2460.00	HERC2460-2470	New Entry	Alt. product	35.33	0.06	10.95		17.47	0.28	14.10	0.58	0.33	0.09	79.19	
Hercules J-15	2460.00	HERC2460-2470	New Entry	Alt. product	37.67	0.63	10.70		17.79	0.11	14.70	1.02	0.46	0.14	83.22	
Hercules J-15	2460.00	HERC2460-2470	New Entry	Alt. product	29.72	0.22	10.47		26.14	0.61	10.74	1.02	0.31	0.17	79.40	
Hercules J-15	2460.00	HERC2460-2470	New Entry	Alt. product	31.40	0.00	11.57		25.55	0.54	10.95	1.16	0.52	0.13	81.82	
Hercules J-15	2460.00	HERC2460-2470	New Entry	Alt. product	34.39	0.72	13.77		24.71	0.42	12.53	0.90	0.39	0.11	87.94	
Hercules J-15	2460.00	HERC2460-2470	New Entry	Alt. product	37.03	0.18	9.69		18.55	0.17	14.02	0.92	0.36	0.10	81.02	average
Hercules J-15	2460.00	HERC2460-2470	New Entry	Alt. product	30.56	0.11	11.02		25.80	0.58	10.85	1.09	0.42	0.15	80.58	average
Hercules J-15	2460.00	HERC2460-2470	New Entry	Alt. product	30.97	0.51	11.78		28.31	0.41	9.55	1.16	0.49	0.08	83.26	average
Hercules J-15	2460.00	HERC2460-2470	New Entry	Alt. product	34.39	0.72	13.77		24.71	0.42	12.53	0.90	0.39	0.11	87.94	
Hercules J-15	2540.00	HERC2540-2550	New Entry	Alt. product	37.61	0.00	12.28		19.02	0.26	16.24	0.99	0.46	0.07	86.93	average
Hercules J-15	2540.00	HERC2540-2550	New Entry	Alt. product	32.72	0.02	12.59		29.81	0.33	12.41	0.36	0.22	0.02	88.48	average
Hercules J-15	2540.00	HERC2540-2550	New Entry	Alt. product	45.36	0.00	4.61		23.88	0.42	12.53	1.16	0.52	0.42	88.90	alt, brown crystal in vein
Hercules J-15	2540.00	HERC2540-2550	New Entry	Alt. product	45.19	0.14	4.97		24.14	0.24	12.19	1.07	0.74	0.52	89.20	alt, independent brown crystal
Hercules J-15	2540.00	HERC2540-2550	New Entry	Alt. product	58.64	0.00	25.60		0.74	0.00	0.00	7.49	6.77	0.84	100.08	alt, fibrous
Argo F-38	3400.00	ARG3400-3410	New Entry	Alt. product	34.64	0.09	13.78		24.96	0.11	14.41	0.56	0.34	0.07	88.96	average
Argo F-38	3400.00	ARG3400-3410	New Entry	Alt. product	45.79	0.06	4.88		28.79	0.00	8.28	0.98	0.58	0.40	89.76	alt, yellow (clean)
Argo F-38	3400.00	ARG3400-3410	New Entry	Alt. product	45.90	0.10	5.10		28.85	0.00	8.46	1.12	0.64	0.45	90.62	alt, yellow (dusty)
Argo F-38	3400.00	ARG3400-3410	New Entry	Alt. product	47.10	0.13	5.00		26.12	0.06	8.60	1.28	0.42	0.31	89.02	alt, yellow (clean)
Argo F-38	3400.00	ARG3400-3410	New Entry	Alt. product	47.22	0.15	4.98		27.85	0.04	8.46	1.07	1.04	0.46	91.27	alt, brown
Jason C-20	4520.00	JAS4520-4530	New Entry	Alt. product	37.09	0.14	10.51		21.63	0.25	15.01	1.35	0.43	0.47	86.88	average
Jason C-20	4520.00	JAS4520-4530	New Entry	Alt. product	32.41	0.00	12.87		29.70	0.32	12.41	0.54	0.42	0.07	88.74	average
Jason C-20	4520.00	JAS4520-4530	New Entry	Alt. product	48.07	0.16	2.47		24.84	0.69	10.81	0.31	0.52	0.31	88.18	alt, brown
Jason C-20	4520.00	JAS4520-4530	New Entry	Alt. product	46.98	0.12	2.39		26.04	0.66	9.61	0.49	0.32	0.25	86.86	alt, brown (clean)
Jason C-20	4520.00	JAS4520-4530	New Entry	Alt. product	36.34	0.12	8.86		21.22	0.17	14.79	1.60	0.49	0.19	83.78	alt, brown
Hesper I-52	8960.00	HES8960-8970	New Entry	Alt. product	33.53	0.00	10.69		25.89	0.14	15.44	1.18	0.32	0.04	87.23	
Hesper I-52	8960.00	HES8960-8970	New Entry	Alt. product	28.02	0.00	15.90		34.11	0.00	8.79	0.79	0.16	0.05	87.82	
Hesper I-52	8960.00	HES8960-8970	New Entry	Alt. product	30.46	0.04	13.76		31.76	0.17	11.40	0.80	0.23	0.03	88.65	average
Hercules J-15	2540.00	HERC2540-2550	New Entry	Chlorite	38.68	0.00	12.71		15.64	0.27	17.59	1.04	0.55	0.08	86.56	alt, green
Hercules J-15	2540.00	HERC2540-2550	New Entry	Chlorite	36.53	0.00	11.84		22.40	0.24	14.88	0.94	0.36	0.05	87.24	alt, green patchy
Hercules J-15	2540.00	HERC2540-2550	New Entry	Chlorite	32.81	0.00	12.67		29.26	0.37	13.24	0.35	0.26	0.04	89.00	alt, greenish
Hercules J-15	2540.00	HERC2540-2550	New Entry	Chlorite	33.29	0.07	12.16		29.41	0.23	12.74	0.40	0.26	0.00	88.56	alt, greenish
Hercules J-15	2540.00	HERC2540-2550	New Entry	Chlorite	31.80	0.00	14.41		29.52	0.43	11.33	0.44	0.20	0.00	88.13	alt, brown-green
Hercules J-15	2540.00	HERC2540-2550	New Entry	Chlorite	46.13	0.00	21.99		0.65	0.00	0.00	1.86	15.33	1.86	87.82	alt, pink
Hercules J-15	2540.00	HERC2540-2550	New Entry	Chlorite	48.46	0.00	22.88		0.23	0.00	0.00	1.72	14.52	1.69	89.50	alt, colourless
Hercules J-15	2540.00	HERC2540-2550	New Entry	?Chlorite	32.98	0.00	11.13		31.04	0.27	12.31	0.26	0.17	0.05	88.21	alt, brown-green
Argo F-38	3400.00	ARG3400-3410	New Entry	Chlorite	35.10	0.00	10.90		24.36	0.00	17.63	0.27	0.39	0.00	88.65	
Argo F-38	3400.00	ARG3400-3410	New Entry	Chlorite	33.40	0.00	12.65		26.33	0.07	14.46	0.63	0.41	0.00	87.95	

Table 1-6. Electron microprobe chemical analyses of minerals produced by alteration (high and low temperature) of various minerals (olivine, clinopyroxene, biotite, etc.)

Well	Depth (top)	Sample (feet)	File*	Mineral	SiO_2	TiO_2	Al_2O_3	Cr_2O_3	FeO	MnO	MgO	CaO	Na_2O	K_2O	Total	Notes
Argo F-38	3400.00	ARG3400-3410	New Entry	Chlorite	34.07	0.09	15.17		24.86	0.22	13.64	0.52	0.18	0.08	88.83	
Argo F-38	3400.00	ARG3400-3410	New Entry	Chlorite	43.65	0.37	13.98		19.55	0.08	8.29	3.89	1.73	0.33	91.87	alt, scoriaccous
Argo F-38	3400.00	ARG3400-3410	New Entry	Chlorite	34.76	0.11	15.75		24.49	0.07	12.89	0.60	0.25	0.09	89.01	alt, green
Argo F-38	3400.00	ARG3400-3410	New Entry	Chlorite	35.89	0.24	14.42		24.78	0.17	13.45	0.85	0.45	0.18	90.43	alt, colourless
Argo F-38	3400.00	ARG3400-3410	New Entry	?Chlorite	42.76	0.30	8.28		25.11	0.00	11.78	1.92	0.78	0.35	91.28	alt, brown
Jason C-20	4520.00	JAS4520-4530	New Entry	Chlorite	37.89	0.32	11.53		20.39	0.12	14.94	0.92	0.23	1.38	87.72	alt, green (chertish)
Jason C-20	4520.00	JAS4520-4530	New Entry	Chlorite	33.78	0.00	12.08		29.39	0.26	11.58	0.70	0.53	0.13	88.45	alt, brown-green
Jason C-20	4520.00	JAS4520-4530	New Entry	Chlorite	31.04	0.00	13.65		29.41	0.37	13.23	0.38	0.30	0.00	88.38	alt, greenish
Jason C-20	4520.00	JAS4520-4530	New Entry	Chlorite	37.99	0.10	9.76		22.93	0.38	14.03	1.78	0.65	0.26	87.88	alt, green
Jason C-20	4520.00	JAS4520-4530	New Entry	Chlorite	36.14	0.13	11.87		21.96	0.32	16.26	1.09	0.35	0.05	88.17	alt, dusty brown
Hesper I-52	8960.00	HES8960-8970	New Entry	Chlorite	28.79	0.09	14.80		33.69	0.21	10.40	0.73	0.26	0.04	89.01	alt, green
Hesper I-52	8960.00	HES8960-8970	New Entry	Chlorite	32.96	0.07	11.63		29.74	0.31	12.15	1.58	0.29	0.07	88.80	alt, brown
Hesper I-52	8960.00	HES8960-8970	New Entry	Chlorite	33.53	0.00	10.69		25.89	0.14	15.44	1.18	0.32	0.04	87.23	alt, greenish
Hesper I-52	8960.00	HES8960-8970	New Entry	Chlorite	30.42	0.11	14.75		32.25	0.18	11.28	0.46	0.29	0.00	89.74	alt, non-pleochroic
Hesper I-52	8960.00	HES8960-8970	New Entry	Chlorite	29.80	0.00	15.52		32.57	0.16	10.83	0.48	0.15	0.00	89.51	alt, pleochroic
Hesper I-52	8960.00	HES8960-8970	New Entry	Chlorite	29.67	0.00	13.01		34.06	0.16	10.88	0.39	0.14	0.00	88.31	alt, non-pleochroic
Hesper I-52	8960.00	HES8960-8970	New Entry	Chlorite	28.02	0.00	15.90		34.11	0.00	8.79	0.79	0.16	0.05	87.82	alt, pleochroic
Hercules J-15	2540.00	HERC2540-2550	New Entry	Iddingsite	45.39	0.13	1.57		35.57	0.63	2.62	0.36	0.36	0.00	86.63	alt, deep red
Hercules J-15	2540.00	HERC2540-2550	New Entry	Iddingsite	45.28	0.07	4.57		24.01	0.33	12.36	1.12	0.63	0.47	88.84	alt, clean brown, average
Hercules J-15	2540.00	HERC2540-2550	New Entry	Iddingsite	45.39	0.13	1.57		35.57	0.63	2.62	0.36	0.36	0.00	86.63	
Argo F-38	3400.00	HERC3400-3410	New Entry	Iddingsite	46.26	0.10	4.99		27.61	0.03	8.51	1.16	0.70	0.41	89.77	alt, bright orange, average
Argo F-38	3400.00	HERC3400-3410	New Entry	Iddingsite	47.22	0.15	4.98		27.85	0.04	8.46	1.07	1.04	0.46	91.27	alt, brown
Argo F-38	3400.00	HERC3400-3410	New Entry	Iddingsite	43.65	0.37	13.98		19.55	0.08	8.29	3.89	1.73	0.33	91.87	alt, scoriaceous brown
Jason C-20	4520.00	JAS4520-4530	New Entry	Iddingsite	47.53	0.14	2.43		25.44	0.68	10.21	0.40	0.42	0.28	87.53	alt, clean brown, average
Hercules J-15	2540.00	HERC2540-2550	New Entry	Zeolite	47.30	0.00	22.44		0.44	0.00	0.00	1.79	14.93	1.78	88.68	
Hercules J-15	2540.00	HERC2540-2550	New Entry	Zeolite	53.11	0.00	21.27		0.52	0.06	0.00	1.91	18.13	2.34	97.34	
Hesper I-52	8990.00	HES8990-9000	New Entry	Zeolite	49.99	0.00	23.01		0.18	0.00	0.00	0.87	12.57	0.00	86.62	

* all data can be found under Archiving - Minfiles - **File*** *name* **pts** = polished thin section

Table 1-7. Summary of electron microprobe analyses of alteration products of igneous minerals in Scotian Shelf wells.

Well	Hercules J-15		Argo F-38			Jason C-20	Hercules J-15						Argo F-38	Jason C-20		Hesper I-52		
Sample	**2540-2550**		**3400-3410**			**4520-**	**2460-2470**				**2540-2550**		**3400-3410**	**4520-4530**		**8960-8970**		
	"Iddingsite"																	
Type*	Deep Red	Clean Brown	Bright Orange	Brown	Dusty Brown	Clean Brown	1	2	3	4	5	6	7	8	9	10	11	12
SiO_2	45.39	45.28	46.26	47.22	43.65	47.53	37.03	30.56	30.97	34.39	37.61	32.72	34.64	37.09	32.41	33.53	28.02	30.46
TiO_2	0.13	0.07	0.10	0.15	0.37	0.14	0.18	0.11	0.51	0.72	0.00	0.02	0.09	0.14	0.00	0.00	0.00	0.04
Al_2O_3	1.57	4.57	4.99	4.98	13.98	2.43	9.69	11.02	11.78	13.77	12.28	12.59	13.78	10.51	12.87	10.69	15.90	13.76
FeO	35.57	24.01	27.61	27.85	19.55	25.44	18.55	25.80	28.31	24.71	19.02	29.81	24.96	21.63	29.70	25.89	34.11	31.76
MnO	0.63	0.33	0.03	0.04	0.08	0.68	0.17	0.58	0.41	0.42	0.26	0.33	0.11	0.25	0.32	0.14	0.00	0.17
MgO	2.62	12.36	8.51	8.46	8.29	10.21	14.02	10.85	9.55	12.53	16.24	12.41	14.41	15.01	12.41	15.44	8.79	11.40
CaO	0.36	1.12	1.16	1.07	3.89	0.40	0.92	1.09	1.16	0.90	0.99	0.36	0.56	1.35	0.54	1.18	0.79	0.80
Na_2O	0.36	0.63	0.70	1.04	1.73	0.42	0.36	0.42	0.49	0.39	0.46	0.22	0.34	0.43	0.42	0.32	0.16	0.23
K_2O	0.00	0.47	0.41	0.46	0.33	0.28	0.10	0.15	0.08	0.11	0.07	0.02	0.07	0.47	0.07	0.04	0.05	0.03
Total	86.63	88.84	89.77	91.27	91.87	87.53	81.02	80.58	83.26	87.94	86.93	88.48	88.96	86.88	88.74	87.23	87.82	88.65
No. of analyses	1	2	3	1	1	2	5	2	2	1	2	4	5	4	2	1	1	7

* Type 1-12: 1) yellowish, brown-yellowish, dusty brownish fine-grained aggregates; 2) brownish and colourless parts of the same crystal; 3) yellowish grains lining a variole; 4) greenish cores of spherulitic formations with brown rims of composition simialr to 1; 5) dusty greenish patches which could represent altering phenocrysts or varioles filled with clays; 6) greenish and brown-greenish grains; 7) greenish grains; 8) greenish, brown and dusty brown fine grained aggregates; 9) greenish and brown-greenish crystals; 10,11) extreme compositions and; 12) average composition of green, brown, pleochroic and non pleochroic crystals (10 and 11 also included).

Appendix 2: Grand Banks Cretaceous

Table 2-1. Electron microprobe chemical analyses of amphibole and clinopyroxene in the Grand Banks.

Well	Depth (Top)	Sample (pts)	Analyses No.	Mineral	File*	SiO_2	TiO_2	Al_2O_3	Cr_2O_3	FeO	MnO	MgO	CaO	Na_2O	K_2O	Total	Notes
Mallard M-45	8310	MAL8310		Amphibole	New Entry	51.02	0.42	0.84		36.09	0.53	0.47	0.24	6.83	0.34	96.78	granite, ph, core
Mallard M-45	8310	MAL8310		Amphibole	New Entry	50.18	1.81	0.43		32.23	1.51	0.20	0.18	8.88	1.86	97.28	granite, ph, rim
Mallard M-45	8310	MAL8310		Amphibole	New Entry	48.42	0.43	0.81		38.74	0.89		0.87	6.16	0.44	96.76	graphic granite, ph, core
Mallard M-45	8310	MAL8310		Amphibole	New Entry	47.98	0.51	1.04		39.54	0.84		0.82	6.24	0.48	97.45	graphic granite, ph, rim
Mallard M-45	8546	MAL8546		Amphibole	New Entry	48.68	1.73	1.11		33.09	1.33	0.61	1.96	7.62	1.32	97.45	granite, mph
Mallard M-45	8660	MAL8660		Amphibole	New Entry	50.28	1.04	0.31		34.02	0.92		1.10	8.43	1.29	97.39	microgranite, vermicule
Brant P-87	9390	BRA9390	2R	Clinopyroxene	New Entry	48.67	1.11	6.06		7.51	0.00	13.80	23.43	0.11		100.69	(Upper unit) Mafic Rocks
Brant P-87	9390	BRA9390	3R	Clinopyroxene	New Entry	44.83	2.42	9.30		8.74	0.00	11.24	23.27	0.07		99.87	
Brant P-87	9390	BRA9390	4	Clinopyroxene	New Entry	47.74	1.59	7.23		7.49	0.00	13.21	23.57	0.40		101.23	
Brant P-87	9390	BRA9390	5	Clinopyroxene	New Entry	48.27	1.57	5.85		7.17	0.00	13.35	23.39	0.00		99.60	
Brant P-87	9390	BRA9390	7	Clinopyroxene	New Entry	48.83	1.58	5.58		7.45	0.06	14.00	23.55	0.00		101.05	
Brant P-87	9390	BRA9390	6R	Clinopyroxene	New Entry	49.08	1.75	6.04		7.38	0.08	13.34	23.37	0.17		101.21	
Brant P-87	9390	BRA9390	4R	Clinopyroxene	New Entry	47.81	1.88	7.25		7.20	0.60	13.04	23.72	0.19		101.69	
Brant P-87	9390	BRA9390	7RR	Clinopyroxene	New Entry	48.65	1.23	5.72		7.38	0.21	13.91	23.37	0.25		100.72	
Brant P-87	9390	BRA9390	4RR	Clinopyroxene	New Entry	47.38	1.84	7.03		7.13	0.00	12.74	23.28	0.09		99.49	
Brant P-87	11620	BRA11620		Clinopyroxene	PX2	48.94	2.35	3.11		10.55	0.25	13.53	20.46	0.15		99.34	(Lower unit) Mafic Rocks
Brant P-87	11620	BRA11620		Clinopyroxene	PX2	51.91	1.37	1.70		10.65	0.24	14.30	20.34	0.14		100.65	
Brant P-87	11620	BRA11620		Clinopyroxene	PX2	50.40	1.74	2.48		9.31	0.23	14.18	21.06	0.39		99.79	
Brant P-87	11620	BRA11620		Clinopyroxene	PX2	50.13	1.49	2.60	0.05	9.40	0.10	13.82	21.00	0.27		98.86	
Brant P-87	11700	BRA11700		Clinopyroxene	PX2	50.44	1.57	2.37	0.05	10.96	0.22	13.46	20.62	0.25		99.94	
Brant P-87	11700	BRA11700		Clinopyroxene	PX2	51.93	1.20	1.38		11.41	0.18	14.03	20.39	0.10		100.62	
Brant P-87	11700	BRA11700		Clinopyroxene	PX2	50.25	1.56	2.35		11.19	0.25	13.18	20.86	0.08		99.72	
Brant P-87	11700	BRA11700		Clinopyroxene	PX2	50.04	1.96	2.77	0.08	10.24	0.32	13.81	20.67	0.17		100.06	
Emerillon G-56	9750	EME9750		Clinopyroxene	PX2	47.27	2.46	5.12		9.93	0.32	12.61	20.37	0.60		98.68	
Emerillon G-56	9750	EME9750		Clinopyroxene	PX2	51.09	1.39	2.56		8.88	0.24	14.65	20.54	0.44		99.79	
Emerillon G-56	9800	EME9800		Clinopyroxene	PX2	49.56	1.74	3.76	0.05	9.41	0.33	13.36	20.92	0.61		99.74	
Emerillon G-56	9800	EME9800		Clinopyroxene	PX2	49.24	1.93	4.10	0.04	9.16	0.34	13.43	21.02	0.61		99.87	
Emerillon G-56	9800	EME9800		Clinopyroxene	PX2	51.14	1.10	2.08		8.77	0.36	14.88	20.29	0.28		98.90	
Emerillon G-56	9800	EME9800		Clinopyroxene	PX2	49.00	2.08	3.92		8.95	0.26	13.22	21.30	0.51		99.24	
Emerillon G-56	9800	EME9800		Clinopyroxene	PX2	51.87	0.91	1.52		9.88	0.37	14.51	19.92	0.38		99.36	
Emerillon G-56	9810	EME9810		Clinopyroxene	PX2	50.97	1.26	1.98		8.97	0.29	14.31	20.33	0.27		98.38	
Emerillon G-56	9820	EME9820	2	Clinopyroxene	New Entry	42.16	0.06	22.98		7.47	0.00	2.40	21.18	0.00		96.25	brown
Emerillon G-56	9820	EME9820		Clinopyroxene	PX2	48.85	2.36	4.32		9.79	0.33	13.02	20.61	0.62		99.90	
Emerillon G-56	9982	EME9982		Clinopyroxene	PX2	47.14	3.15	5.51		10.13	0.20	12.39	20.80	0.53		99.85	
Twillick G-49	4240	TWI4240		Clinopyroxene	PX2	46.29	3.05	6.24	0.13	10.05	0.26	12.46	20.73	0.41		99.62	
Twillick G-49	4240	TWI4240		Clinopyroxene	PX2	47.11	2.43	5.23	0.05	10.28	0.13	12.68	20.81	0.19		98.91	
Twillick G-49	4240	TWI4240		Clinopyroxene	PX2	47.43	2.60	5.22	0.07	9.29	0.23	13.30	21.18	0.24		99.56	
Twillick G-49	4240	TWI4240		Clinopyroxene	PX2	47.63	2.37	5.09		9.77	0.21	12.91	21.14	0.28		99.40	
Twillick G-49	4240	TWI4240		Clinopyroxene	PX2	48.43	1.84	3.99		10.51	0.17	12.50	20.70	0.13		98.27	
Twillick G-49	4240	TWI4240		Clinopyroxene	PX2	48.44	2.05	4.05	0.13	8.74	0.24	13.64	21.23	0.20		98.72	
Twillick G-49	4240	TWI4240		Clinopyroxene	PX2	48.48	2.12	4.71	0.09	8.50	0.18	13.51	21.66	0.39		99.64	
Twillick G-49	4240	TWI4240		Clinopyroxene	PX2	48.57	1.96	3.97		10.42	0.27	12.99	20.66	0.23		99.07	
Twillick G-49	4240	TWI4240		Clinopyroxene	PX2	48.65	1.92	4.03	0.05	8.71	0.15	13.88	21.35	0.16		98.90	
Twillick G-49	4240	TWI4240		Clinopyroxene	PX2	48.80	1.53	4.77	0.14	8.51	0.12	13.89	21.38	0.20		99.34	

Table 2-1. Electron microprobe chemical analyses of amphibole and clinopyroxene in the Grand Banks.

Well	Depth (Top)	Sample (pts)	Analyses No.	Mineral	File*	SiO_2	TiO_2	Al_2O_3	Cr_2O_3	FeO	MnO	MgO	CaO	Na_2O	K_2O	Total	Notes
Mallard M-45	8310	MAL8310		Clinopyroxene	New Entry	53.02	2.45	0.56		28.15	0.46			13.40		98.04	granite, ph
Mallard M-45	8310	MAL8310		Clinopyroxene	New Entry	53.50	0.63	0.90		29.51	0.39		0.21	13.81		98.95	granite, ph
Mallard M-45	8660	MAL8660		Clinopyroxene	New Entry	52.52	0.54	0.59		29.16	0.97		0.87	12.79		97.44	granite, ph
Mallard M-45	8660	MAL8660		Clinopyroxene	New Entry	52.48	0.99	0.62		29.14	0.90		0.80	12.68		97.61	granite, ph

[1,2,3] the highlighting indicates mineral analyses that have supplementary sketches at the end of the table. 1 = analysis sample name 2 = figure label where sketch is located 3 = position of analysis in mineral crystal/grain

* all data can be found under Archiving - Minfiles - **File*** *name* **pts** = polished thin section

Table 2-2. Electron microprobe chemical analyses of Feldspar in the Grand Banks.

Well	Depth (Top)	Sample[1] (pts)	Analyses No.	Figure[2]	Position[3]	Mineral	File*	SiO_2	TiO_2	Al_2O_3	Cr_2O_3	FeO	MnO	MgO	CaO	Na_2O	K_2O	P_2O_5	Total	Notes
Brant P-87	11620	**BRA11620**	1-1	**L**	**1**	Feldspar	New Entry	53.25	0.13	28.90		0.82	0.10	0.07	12.48	4.47	0.37		100.59	
Brant P-87	11620	**BRA11620**	1-2	**L**	**2**	Feldspar	New Entry	55.12	0.09	27.89		0.88	0.00	0.00	11.44	5.05	0.46		100.93	
Brant P-87	11620	**BRA11620**	2-3	**L**	**3**	Feldspar	New Entry	54.61	0.19	27.57		0.96	0.04	0.00	11.23	5.01	0.51		100.12	
Brant P-87	11620	**BRA11620**	2-4	**L**	**4**	Feldspar	New Entry	55.21	0.21	28.30		0.91	0.00	0.14	11.61	4.97	0.47		101.82	
Brant P-87	11620	**BRA11620**	3-5	**L**	**5**	Feldspar	New Entry	54.18	0.13	28.60		0.85	0.00	0.00	12.08	4.78	0.44		101.06	
Brant P-87	11620	**BRA11620**	3-6	**L**	**6**	Feldspar	New Entry	48.32	0.07	31.90		0.70	0.00	0.00	16.41	2.26	0.05		99.71	
Brant P-87	11620	**BRA11620**	3-7	**L**	**7**	Feldspar	New Entry	51.43	0.09	30.21		0.92	0.00	0.00	14.31	3.57	0.29		100.82	
Brant P-87	11620	**BRA11620**		**L**	**8**	Feldspar	New Entry	48.40	0.08	32.35		0.69	0.00	0.00	16.84	2.21	0.10		100.67	
Brant P-87	11620	**BRA11620**	3-9	**L**	**9**	Feldspar	New Entry	47.33	0.00	33.12		0.84	0.00	0.00	17.64	1.82	0.06		100.81	
Brant P-87	11700	**BRA11700**	1	**K**	**1**	Feldspar	New Entry	49.31	0.00	31.38		0.75	0.00	0.00	15.00	2.96	0.19		99.59	
Brant P-87	11700	**BRA11700**	2	**K**	**2**	Feldspar	New Entry	48.99	0.00	31.10		0.79	0.04	0.18	15.09	2.84	0.22		99.25	
Brant P-87	11700	**BRA11700**	3	**K**	**3**	Feldspar	New Entry	52.96	0.22	28.10		0.88	0.00	0.00	11.42	4.59	0.36		98.53	
Brant P-87	11700	BRA11700	3R			Feldspar	New Entry	52.79	0.14	28.93		0.86	0.00	0.00	12.34	4.36	0.32		99.74	
Brant P-87	11700	**BRA11700**	4R	**K**	**4**	Feldspar	New Entry	48.24	0.10	32.26		0.97	0.05	0.08	15.94	2.25	0.16		100.05	
Brant P-87	11700	**BRA11700**	5R	**K**	**5**	Feldspar	New Entry	62.34	0.00	22.87		0.74	0.00	0.00	4.65	6.39	3.48		100.47	
Brant P-87	11700	**BRA11700**	7	**K**	**7**	Feldspar	New Entry	48.93	0.10	32.46		0.74	0.00	0.00	16.12	2.35	0.10		100.80	
Brant P-87	11700	**BRA11700**	9R	**K**	**9**	Feldspar	New Entry	49.30	0.00	32.59		0.67	0.00	0.07	16.11	2.61	0.12		101.47	
Brant P-87	11700	**BRA11700**	10	**K**	**10**	Feldspar	New Entry	54.52	0.18	28.84		0.77	0.00	0.08	11.71	4.80	0.37		101.27	
Brant P-87	11700	**BRA11700**	12	**K**	**12**	Feldspar	New Entry	48.41	0.05	32.91		0.68	0.00	0.00	16.68	2.32	0.10		101.15	
Brant P-87	11700	**BRA11700**	13	**K**	**13**	Feldspar	New Entry	47.55	0.00	32.79		0.65	0.05	0.00	17.08	1.93	0.05		100.10	
Brant P-87	11700	**BRA11700**	14	**K**	**14**	Feldspar	New Entry	55.74	0.08	27.28		0.85	0.00	0.00	10.19	5.58	0.53		100.25	
Brant P-87	11700	**BRA11700**	15	**K**	**15**	Feldspar	New Entry	53.99	0.00	28.20		0.74	0.00	0.00	11.80	4.85	0.37		99.95	
Brant P-87	11700	**BRA11700**	17	**K**	**17**	Feldspar	New Entry	48.97	0.00	31.73		0.70	0.00	0.00	15.85	2.53	0.11		99.89	
Brant P-87	11700	**BRA11700**	18	**K**	**18**	Feldspar	New Entry	54.50	0.13	28.53		0.78	0.07	0.00	11.67	4.97	0.45		101.10	
Brant P-87	11700	**BRA11700**	19	**K**	**19**	Feldspar	New Entry	52.12	0.16	30.11		0.98	0.00	0.05	14.02	3.74	0.29		101.47	
Emerillon G-56	9800	EME9800	14			Feldspar	New Entry	63.27	0.00	22.24		0.42	0.00	0.00	0.90	9.36	1.89		98.08	mph
Emerillon G-56	9800	EME9800	16			Feldspar	New Entry	57.68	0.00	24.91		0.45	0.00	0.00	6.29	7.52	0.73		97.58	ph
Emerillon G-56	9800	EME9800	18			Feldspar	New Entry	52.68	0.25	27.43		1.52	0.00	0.11	10.29	4.87	0.49		97.64	ph
Emerillon G-56	9800	EME9800	22			Feldspar	New Entry	55.92	0.17	26.56		0.49	0.00	0.00	7.73	6.18	0.79		97.84	ph
Emerillon G-56	9800	EME9800	21			Feldspar	New Entry	67.48	0.00	20.33		0.11	0.00	0.00	0.65	11.34	0.06		99.97	ph
Emerillon G-56	9800	EME9800	15			Feldspar	New Entry	65.56	0.15	18.52		0.52	0.06	0.00	0.18	5.70	9.09		99.78	mph
Emerillon G-56	9800	EME9800	17			Feldspar	New Entry	65.71	0.00	18.84		0.21	0.08	0.00	0.27	5.74	9.05		99.90	ph
Emerillon G-56	9800	EME9800	19			Feldspar	New Entry	64.09	0.00	20.25		0.14	0.00	0.00	1.19	6.25	6.95		98.87	mph
Emerillon G-56	9800	EME9800	20			Feldspar	New Entry	62.81	0.09	18.46		0.20	0.00	0.00	0.05	1.71	14.49		97.81	overgr
Emerillon G-56	9800	EME9800	24			Feldspar	New Entry	52.89	0.15	27.72		0.51	0.00	0.00	10.73	4.63	0.51		97.14	ph
Emerillon G-56	9800	EME9800	25			Feldspar	New Entry	53.92	0.11	27.37		0.26	0.00	0.00	10.18	5.03	0.54		97.41	ph
Emerillon G-56	9800	EME9800	26			Feldspar	New Entry	52.21	0.06	27.88		0.57	0.00	0.10	11.41	4.51	0.46		97.20	ph
Emerillon G-56	9800	EME9800	23			Feldspar	New Entry	63.93	0.10	19.96		0.26	0.00	0.00	1.66	6.08	6.79		98.78	ph
Emerillon G-56	9810	EME9810				Feldspar	New Entry	59.60	0.00	24.19		0.24	0.00	0.00	5.86	7.49	0.99		98.42	ph
Emerillon G-56	9810	EME9810				Feldspar	New Entry	66.35	0.00	18.49		0.40	0.00	0.00	0.18	6.04	8.32		99.77	mph
Emerillon G-56	9810	EME9810				Feldspar	New Entry	65.09	0.06	18.44		0.44	0.00	0.00	0.39	5.88	8.80		99.10	mph
Emerillon G-56	9820	EME9820				Feldspar	New Entry	66.20	0.00	19.62		0.16	0.00	0.00	0.59	10.59	0.58		97.73	?mph
Emerillon G-56	9820	EME9820				Feldspar	New Entry	64.61	0.00	18.32		0.37	0.06	0.00	0.20	5.84	8.54		97.94	ph
Emerillon G-56	9820	EME9820				Feldspar	New Entry	64.27	0.00	18.77		0.34	0.00	0.00	0.54	5.62	8.71		98.26	ph
Twillick G-49	4240	**TWI4240**	2	**L**	**2**	Feldspar	New Entry	64.74	0.00	18.32		0.08	0.00	0.00	0.00	0.00	14.87		98.01	

Table 2-2. Electron microprobe chemical analyses of Feldspar in the Grand Banks.

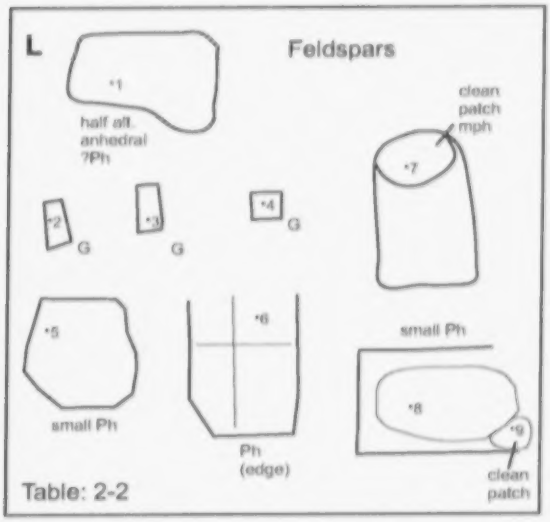
Well	Depth (Top)	Sample[1] (pts)	Analyses No.	Figure[2]	Position[3]	Mineral	File*	SiO_2	TiO_2	Al_2O_3	Cr_2O_3	FeO	MnO	MgO	CaO	Na_2O	K_2O	P_2O_5	Total	Notes
Twillick G-49	4260	**TWI4260**	2	**L**	**2**	Feldspar	New Entry	53.77	0.00	28.28		0.92	0.00	0.00	11.28	5.18	0.35		99.83	

[1,2,3] the highlighting indicates mineral analyses that have supplementary sketches at the end of the table. 1 = analysis sample name 2 = figure label where sketch is located 3 = position of analysis in mineral crystal/grain

* all data can be found under Archiving - Minfiles - **File*** *name* **pts** = polished thin section ph = phenocryst, mph = microphenocryst, overgr = overgrowth

Sketches for selected analyses in Table 2-2.

Brant P-87 (11620ft)



Brant P-87 (11700ft)

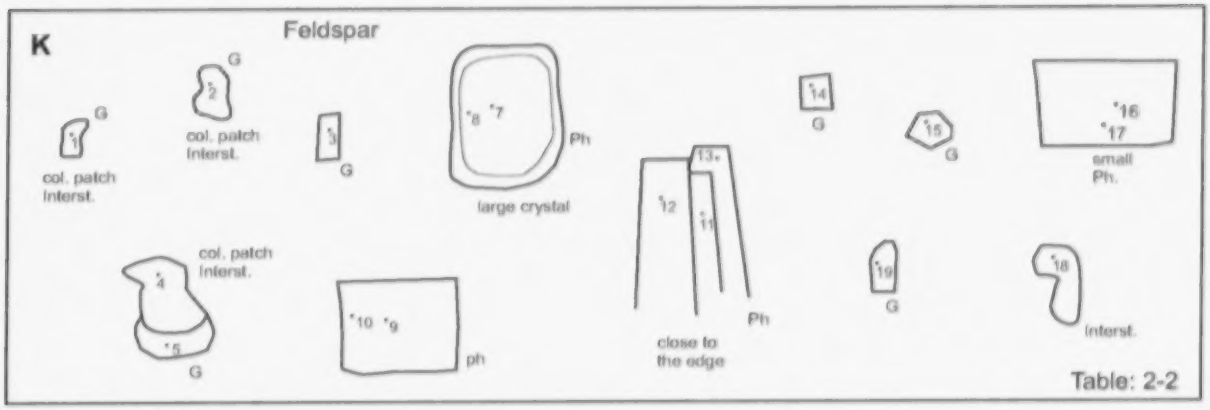


Table 2-3. Electron mircoprobe chemical analyses of alteration minerals (Chlorite, ?Natrolite, ?Vermiculite) in the Grand Banks.

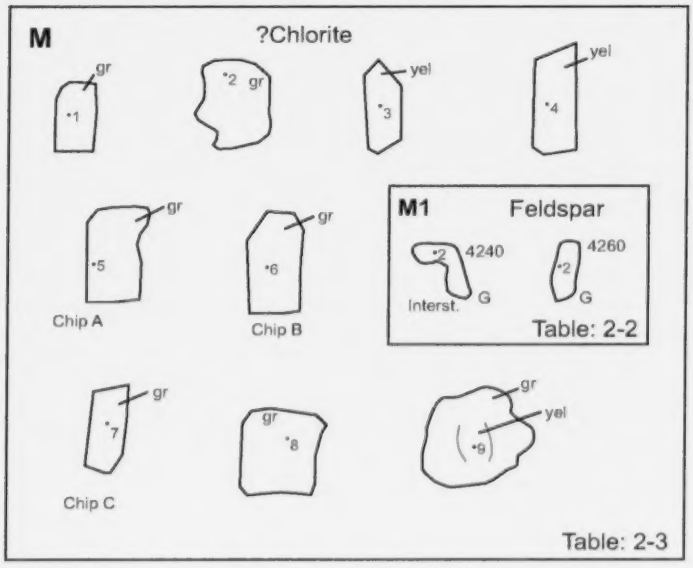
Well	Depth (Top)	Sample[1] (pts)	Analyses No.	Figure[2]	Position[3]	Mineral	File*	SiO_2	TiO_2	Al_2O_3	Cr_2O_3	FeO	MnO	MgO	CaO	Na_2O	K_2O	Total	Notes
Emerillon G-56	9850	EME9850	3			?	New Entry	50.39	0.00	17.78		14.96	0.16	5.81	0.42	5.75	1.37	96.64	?green
Emerillon G-56	9820	EME9820	5			Mica	New Entry	35.30	5.68	11.43		18.28	0.17	11.80	0.00	0.58	8.89	92.13	dark brown
Emerillon G-56	9800	EME9800	9			Chlorite	New Entry	30.40	0.00	13.03		28.60	0.24	14.08	0.10	0.09	0.08	86.62	
Emerillon G-56	9800	EME9800	10			Chlorite	New Entry	31.63	0.00	14.23		29.38	0.30	14.87	0.12	0.11	0.00	90.64	green
Emerillon G-56	9800	EME9800	11			Chlorite	New Entry	31.23	0.09	13.19		32.38	0.22	12.52	0.18	0.00	0.09	89.90	brown
Emerillon G-56	9800	EME9800	12			Chlorite	New Entry	33.06	0.00	14.86		25.13	0.17	17.05	0.41	0.26	0.07	91.01	green
Emerillon G-56	9810	EME9810	2			Chlorite	New Entry	31.94	0.00	14.61		27.29	0.31	15.27	0.44	0.16	0.11	90.13	scoriaceous green
Emerillon G-56	9810	EME9810	3			Chlorite	New Entry	32.03	0.00	15.63		27.50	0.23	13.99	0.66	0.00	0.08	90.12	dusty green
Emerillon G-56	9820	EME9820	2			Chlorite	New Entry	31.36	0.00	14.77		28.72	0.27	14.73	0.08	0.00	0.07	90.00	colourless
Emerillon G-56	9820	EME9820	5			Chlorite	New Entry	30.91	0.07	16.52		28.12	0.26	13.94	0.20	0.09	0.07	90.18	colourless
Emerillon G-56	9820	EME9820	6			Chlorite	New Entry	30.70	0.21	16.47		30.30	0.37	10.58	0.50	0.00	0.47	89.60	green
Emerillon G-56	9820	EME9820	7			Chlorite	New Entry	31.03	0.05	14.11		28.88	0.22	14.42	0.13	0.12	0.00	88.96	?colourless
Emerillon G-56	9820	EME9820	9			Chlorite	New Entry	31.45	0.10	14.47		27.64	0.17	15.49	0.15	0.00	0.07	89.54	golden green
Twillick G-49	4230	**TWI4230**	1	**N**	**1**	Chlorite	New Entry	28.63	0.00	16.56		31.18	0.17	11.65	0.12	0.00	0.00	88.31	
Twillick G-49	4230	**TWI4230**	2	**N**	**2**	Chlorite	New Entry	28.36	0.00	15.87		33.50	0.15	10.42	0.00	0.00	0.00	88.30	
Twillick G-49	4230	**TWI4230**	3	**N**	**3**	Chlorite	New Entry	27.71	0.00	17.56		29.97	0.21	12.29	0.21	0.00	0.00	87.95	
Twillick G-49	4240	**TWI4240**	1	**M**	**1**	?Chlorite	New Entry	28.27	0.00	16.54		34.18	0.11	11.29	0.11	0.00	0.00	90.50	
Twillick G-49	4240	**TWI4240**	2	**M**	**2**	?Chlorite	New Entry	27.64	0.00	17.60		33.22	0.18	10.94	0.07	0.00	0.00	89.65	
Twillick G-49	4240	**TWI4240**	4	**M**	**4**	?Chlorite	New Entry	27.15	0.00	17.84		35.41	0.36	9.17	0.16	0.00	0.00	90.09	
Twillick G-49	4240	**TWI4240**	5	**M**	**5**	?Chlorite	New Entry	28.43	0.00	16.68		33.19	0.24	11.68	0.06	0.00	0.00	90.28	
Twillick G-49	4240	**TWI4240**	6	**M**	**6**	?Chlorite	New Entry	27.96	0.00	16.99		32.35	0.23	11.69	0.21	0.00	0.00	89.43	
Twillick G-49	4240	**TWI4240**	7	**M**	**7**	?Chlorite	New Entry	27.60	0.00	16.83		31.68	0.22	11.23	0.11	0.00	0.00	87.67	
Twillick G-49	4240	**TWI4240**	8	**M**	**8**	?Chlorite	New Entry	26.26	0.00	18.60		33.87	0.43	9.54	0.11	0.00	0.00	88.81	
Twillick G-49	4240	**TWI4240**	9	**M**	**9**	?Chlorite	New Entry	26.13	0.00	18.78		34.55	0.28	9.55	0.00	0.00	0.00	89.29	
Emerillon G-56	9820	EME9820	13			?Natrolite	New Entry	49.72	0.00	23.56		0.00	0.00	0.00	0.75	13.40	0.06	87.49	ph
Emerillon G-56	9820	EME9820	14			?Vermiculite	New Entry	37.23	0.75	14.25		19.83	0.07	6.20	8.13	0.00	4.62	91.08	brownish
Emerillon G-56	9850	EME9820	9			?Vermiculite	New Entry	34.36	0.54	15.75		21.41	0.18	3.64	10.56	0.00	2.21	88.65	brownish prism

[1,2,3] the highlighting indicates mineral analyses that have supplementary sketches at the end of the table. 1 = analysis sample name 2 = figure label where sketch is located 3 = position of analysis in mineral crystal/grain

* all data can be found under Archiving - Minfiles - **File*** *name* **pts** = polished thin section ph = phenocryst

Sketches for selected analyses in Table 2-3.

Twillick G-49 (4240ft)

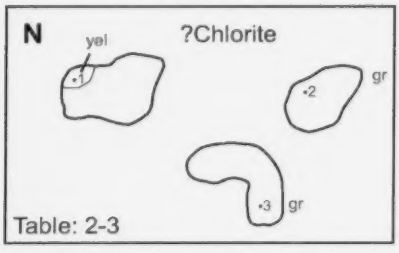


Notes:

Twillick G-49 (4240ft): Calcite

Twillick G-49 (4260ft): Quartz
Calcite

Twillick G-49 (4230ft)



Appendix 3: US continental margin

Table 3-1. Electron microprobe chemical analyses of biotite and clinopyroxene from the Baltimore Canyon.

Well	Depth (Top)	Sample[1] (pts)	Analyses No.	File	Figure[2]	Position[3]	File*	Mineral	SiO_2	TiO_2	Al_2O_3	Cr_2O_3	FeO	MnO	MgO	CaO	Na_2O	K_2O	Total	Notes
Baltimore Canyon	9770	**BC (9770)**	**1**	New Entry	**1**	**1**	New Entry	Clinopyroxene	45.38	2.58	8.78	0.00	8.64	0.13	11.10	23.24	0.41	0.00	100.26	Mobil 544-1 Well
Baltimore Canyon	9770	**BC (9770)**	**6**	New Entry	**1**	**6**	New Entry	Clinopyroxene	47.15	1.77	5.46	0.11	8.43	0.11	12.02	22.73	0.49	0.00	98.27	
Baltimore Canyon	9770	**BC (9770)**	**7**	New Entry	**1**	**7**	New Entry	Clinopyroxene	45.62	2.68	6.98	0.00	7.39	0.00	12.40	23.03	0.16	0.00	98.26	
Baltimore Canyon	9770	**BC (9770)**	**3**	New Entry	**1**	**3**	New Entry	Biotite	34.95	6.27	18.94		15.56	0.10	12.80	0.00	0.15	9.20	97.97	
Baltimore Canyon	9770	**BC (9770)**	**4**	New Entry	**1**	**4**	New Entry	Biotite	35.83	6.10	17.14		10.08	0.00	16.97	0.00	0.18	9.20	95.50	

[1,2,3] the highlighting indicates mineral analyses that have supplementary sketches at the end of the table. 1 = analysis sample name 2 = figure label where sketch is located 3 = position of analysis in mineral crystal/grain

* all data can be found under Archiving - Minfiles - **File*** *name* **pts** = polished thin section

Sketches for selected analyses in Table 3-1.

Baltimore Canyon (9770 ft)

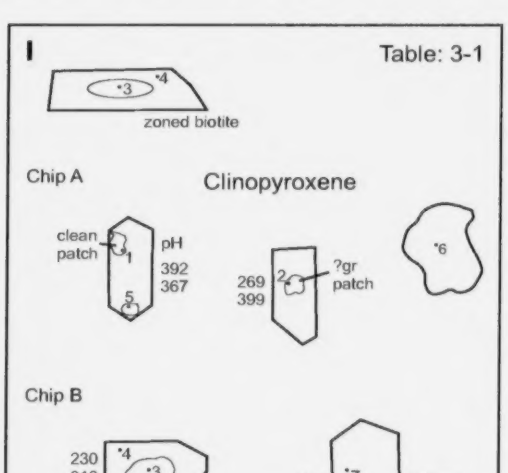


Table 3-2. Electron microprobe chemical analyses of amphibole, clinopyroxene, and biotite from New Hampshire (Seabrook dikes).

Well	Depth (Top)	Sample[1] (pts)	Analyses No.	File*	Mineral	SiO_2	TiO_2	Al_2O_3	Cr_2O_3	FeO	MnO	MgO	CaO	Na_2O	K_2O	BaO	Total	Notes
New Hampshire		B1		New Entry	Amphibole	39.65	5.51	11.17		17.49	0.06	9.20	10.61	2.60	0.90		97.19	
New Hampshire		B1	1	New Entry	Clinopyroxene	51.47	0.98	4.39	0.27	6.77	0.00	15.67	21.08	0.27	0.00		100.90	core
New Hampshire		B1	1	New Entry	Clinopyroxene	50.10	1.32	5.00	0.00	7.10	0.07	14.73	21.78	0.36	0.00		100.46	
New Hampshire		B1	11	New Entry	Clinopyroxene	49.34	1.38	4.55	0.00	7.30	0.14	15.17	21.73	0.39	0.00		100.00	
New Hampshire		B1	12	New Entry	Clinopyroxene	49.16	1.09	5.93	0.00	6.18	0.00	15.01	20.54	0.41	0.00		98.32	
New Hampshire		B1	13	New Entry	Clinopyroxene	50.53	0.73	4.34	0.00	6.06	0.00	16.09	19.72	0.23	0.00		97.70	
New Hampshire		B1	14	New Entry	Clinopyroxene	49.28	0.16	4.32	0.00	6.88	0.06	14.73	21.66	0.30	0.00		97.39	
New Hampshire		B1	15	New Entry	Clinopyroxene	50.25	1.30	3.42	0.00	7.82	0.13	14.83	21.68	0.25	0.00		99.68	
New Hampshire		B1	16	New Entry	Clinopyroxene	48.99	1.15	6.11	0.00	6.21	0.09	15.06	20.47	0.41	0.00		98.49	
New Hampshire		B1	17	New Entry	Clinopyroxene	50.91	0.74	4.48	0.00	6.05	0.00	16.07	19.89	0.35	0.00		98.49	
New Hampshire		B1	18	New Entry	Clinopyroxene	50.69	0.82	4.14	0.00	6.08	0.00	16.26	19.69	0.21	0.00		97.89	
New Hampshire		B1	19	New Entry	Clinopyroxene	49.82	1.19	4.12	0.00	7.27	0.00	14.75	21.45	0.12	0.00		98.72	
New Hampshire		B1	2	New Entry	Clinopyroxene	49.05	1.99	5.75	0.51	6.80	0.05	13.92	22.08	0.28	0.00		100.43	inter
New Hampshire		B1	2	New Entry	Clinopyroxene	49.01	1.83	5.90	0.00	7.43	0.00	13.77	21.57	0.21	0.00		99.72	
New Hampshire		B1	20	New Entry	Clinopyroxene	49.87	1.14	4.01	0.00	7.86	0.00	14.74	21.18	0.39	0.00		99.19	
New Hampshire		B1	21	New Entry	Clinopyroxene	48.70	1.40	5.08	0.00	7.23	0.00	14.50	21.23	0.21	0.00		98.35	
New Hampshire		B1	22	New Entry	Clinopyroxene	48.65	1.61	5.33	0.00	7.15	0.00	14.04	21.94	0.00	0.00		98.72	
New Hampshire		B1	23	New Entry	Clinopyroxene	46.87	2.18	6.15	0.00	9.25	0.00	12.94	21.63	0.42	0.00		99.44	
New Hampshire		B1	24	New Entry	Clinopyroxene	46.56	3.67	6.51	0.00	9.47	0.00	12.16	21.42	0.57	0.00		100.36	
New Hampshire		B1	25	New Entry	Clinopyroxene	50.13	1.09	3.70	0.00	7.26	0.17	15.42	21.25	0.24	0.00		99.26	
New Hampshire		B1	26	New Entry	Clinopyroxene	50.51	1.04	3.60	0.00	7.38	0.06	15.43	21.27	0.22	0.00		99.51	
New Hampshire		B1	28	New Entry	Clinopyroxene	45.78	2.91	6.43	0.00	8.97	0.00	12.46	21.71	0.49	0.00		98.75	
New Hampshire		B1	3	New Entry	Clinopyroxene	46.87	2.18	6.15	0.10	9.25	0.00	12.94	21.63	0.42	0.00		99.54	rim
New Hampshire		B1	30	New Entry	Clinopyroxene	45.96	2.82	5.71	0.00	9.55	0.08	11.90	21.50	0.54	0.00		98.06	
New Hampshire		B1	4	New Entry	Clinopyroxene	51.36	1.16	4.28	0.00	6.78	0.00	15.71	21.23	0.35	0.00		100.87	
New Hampshire		B1	4	New Entry	Clinopyroxene	45.78	2.91	6.43	0.00	8.97	0.00	12.46	21.71	0.49	0.00		98.75	mph
New Hampshire		B1	5	New Entry	Clinopyroxene	50.91	0.74	4.48	0.73	6.05	0.00	16.07	19.89	0.35	0.00		99.22	aggr
New Hampshire		B1	6	New Entry	Clinopyroxene	49.05	1.99	5.75	0.00	6.80	0.05	13.92	22.08	0.28	0.00		99.92	
New Hampshire		B1	7	New Entry	Clinopyroxene	48.34	2.08	7.37	0.00	8.36	0.00	13.49	21.33	0.54	0.00		101.51	
New Hampshire		B1	8	New Entry	Clinopyroxene	49.32	1.86	6.44	0.00	7.62	0.00	13.91	21.74	0.48	0.00		101.37	
New Hampshire		B1	27	New Entry	Orthopyroxene	59.12	0.00	0.77		8.07	0.00	26.25	0.18	0.00	0.00		94.39	
New Hampshire		B1	9	New Entry	Orthopyroxene	58.43	0.00	1.00		12.07	0.00	23.59	0.21	0.00	0.00		95.30	
New Hampshire		B1		New Entry	Biotite	35.68	5.55	14.00		23.28	0.07	8.29	0.00	0.56	8.19	0.66	96.28	

* all data can be found under Archiving - Minfiles - **File*** *name* **pts** = polished thin section mph = microphenocryst, aggr = aggregates, inter = interstitial

Table 3-3. Electron microprobe chemical analyses of olivine, amphibole, clinopyroxene, K-feldspar and opaques from New England Seamounts.

Location	Cruise	Site	Depth (cm)	Rock Lithology	Sample[1] (pts)	Figure[2]	Position[3]	File[4]	Mineral	SiO_2	TiO_2	Al_2O_3	Cr_2O_3	FeO	MnO	MgO	CaO	Na_2O	K_2O	P_2O_5	V_2O_5	Total	Notes
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**H**	**11**	New Entry	Olivine	39.42	0.00	0.00	0.00	17.07	0.10	42.77	0.40	0.00	0.00			100.30	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**H**	**10**	New Entry	Amphibole	41.63	4.61	19.61	0.00	11.04	0.07	5.02	11.96	4.20	2.10	0.62		100.87	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**H**	**13**	New Entry	Amphibole	38.88	5.93	18.13	0.00	9.94	0.00	12.60	11.98	2.28	1.49			101.24	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**H**	**1**	PX3	Clinopyroxene	45.12	2.60	10.07	0.24	6.54	0.00	12.04	21.40	0.37	0.00			98.38	ph, colourless, rim
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**H**	**2**	PX3	Clinopyroxene	45.51	2.31	10.45	0.37	6.56	0.00	12.52	21.73	0.51	0.00			99.96	ph, colourless, core
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**H**	**3**	PX3	Clinopyroxene	44.75	3.20	11.08	0.25	6.86	0.00	11.79	22.05	0.36	0.00			100.34	mph, brown, core
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**H**	**4**	PX3	Clinopyroxene	42.38	4.39	11.78	0.00	8.05	0.00	10.91	22.41	0.25	0.00			100.17	group, brown, core
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**H**	**5**	PX3	Clinopyroxene	48.20	1.92	6.28	0.32	5.84	0.00	14.30	21.97	0.00	0.00			98.83	ph, colourless, core
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**H**	**6**	PX3	Clinopyroxene	44.05	3.38	11.53	0.27	6.41	0.00	11.57	22.34	0.16	0.00			99.71	ph, colourless, rim
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**H**	**7**	PX3	Clinopyroxene	43.39	3.59	12.24	0.32	6.76	0.00	11.68	22.30	0.21	0.00			100.49	ph, brown, core
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**H**	**8**	PX3	Clinopyroxene	46.01	2.98	9.58	0.07	6.52	0.00	12.73	22.62	0.34	0.00			100.85	ph, brown, rim
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**H**	**9**	PX3	Clinopyroxene	42.66	4.37	13.13	0.05	7.03	0.00	11.16	22.42	0.25	0.00			101.07	ph, brown, rim
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**H**	**14**	PX3	Clinopyroxene	40.67	5.70	13.23	0.00	7.81	0.00	10.41	22.47	0.28	0.00			100.57	mph, brown, core
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**H**	**15**	PX3	Clinopyroxene	44.60	2.96	10.30	0.00	6.65	0.00	12.18	22.48	0.11	0.00			99.28	aggr, core
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**H**	**17**	PX3	Clinopyroxene	47.53	2.19	9.02	0.00	5.87	0.00	13.46	21.73	0.27	0.00			100.07	ph, colourless, core
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**H**	**18**	PX3	Clinopyroxene	47.52	2.18	8.29	0.00	5.87	0.00	13.40	21.82	0.48	0.00			99.56	ph, colourless, rim
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**H**	**19**	PX3	Clinopyroxene	45.07	2.57	10.87	0.00	6.43	0.00	12.01	21.75	0.33	0.00			99.03	aggr, brown, core
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**H**	**20**	PX3	Clinopyroxene	47.70	2.07	7.42	0.84	4.40	0.00	13.69	22.44	0.00	0.00			98.56	aggr, brown, rim
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**H**	**21**	PX3	Clinopyroxene	46.56	2.59	8.62	0.98	5.08	0.00	13.27	22.60	0.20	0.00			99.90	aggr, colourless, inter
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**H**	**22**	PX3	Clinopyroxene	48.46	1.98	6.54	0.25	6.02	0.00	14.18	21.96	0.00	0.00			99.39	ph, colourless, core
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**H**	**23**	PX3	Clinopyroxene	43.96	3.04	11.61	0.21	6.24	0.00	11.68	22.15	0.25	0.00			99.14	ph, colourless, rim
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**H**	**24**	PX3	Clinopyroxene	44.40	2.94	11.01	0.15	6.30	0.00	12.17	22.33	0.14	0.00			99.44	aggr, colourless
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**H**	**25**	PX3	Clinopyroxene	43.13	3.78	12.46	0.28	6.06	0.00	11.75	22.49	0.15	0.00			100.10	ph, colourless, core
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**H**	**26**	PX3	Clinopyroxene	43.37	3.68	12.07	0.65	6.03	0.00	11.67	22.29	0.25	0.00			100.01	ph, colourless, rim
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**H**	**27**	PX3	Clinopyroxene	44.37	3.11	11.71	0.41	6.30	0.00	12.03	22.21	0.15	0.00			100.29	ph, brown, core
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**H**	**29**	PX3	Clinopyroxene	43.19	3.89	12.76	0.21	6.72	0.00	11.54	22.34	0.52	0.00			101.17	ph, brown, core
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**H**	**30**	PX3	Clinopyroxene	41.63	4.11	12.25	0.15	6.64	0.00	11.03	22.71	0.00	0.00			98.52	ph, dark brown, rim
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	Leg 43 (96-98)			New Entry	Clinopyroxene	46.41	2.46	8.68	0.00	6.96	0.00	12.27	22.03	0.44	0.00			99.25	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	Leg 43 (96-98)			New Entry	Clinopyroxene	45.76	2.76	8.90	0.00	6.68	0.00	12.25	22.11	0.29	0.00			98.75	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	Leg 43 (96-98)			New Entry	Clinopyroxene	49.07	1.91	5.81	0.00	4.74	0.00	14.58	22.94	0.00	0.00			99.05	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	Leg 43 (96-98)			New Entry	Clinopyroxene	47.85	2.86	5.98	0.00	5.82	0.00	13.98	23.29	0.00	0.00			99.78	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	Leg 43 (96-98)			New Entry	Clinopyroxene	48.13	2.18	7.16	0.00	5.98	0.00	13.53	22.00	0.21	0.00			99.19	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	Leg 43 (96-98)			New Entry	Clinopyroxene	49.39	1.92	6.20	0.00	5.77	0.00	14.72	21.94	0.00	0.00			99.94	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	Leg 43 (96-98)			New Entry	Clinopyroxene	49.16	2.05	6.52	0.00	5.89	0.00	14.30	21.86	0.05	0.00			99.83	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	Leg 43 (96-98)			New Entry	Clinopyroxene	49.57	1.85	6.11	0.00	5.71	0.00	14.32	21.80	0.09	0.00			99.45	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	Leg 43 (96-98)			New Entry	Clinopyroxene	47.79	2.38	7.15	0.00	6.27	0.00	13.27	22.41	0.00	0.00			99.27	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	Leg 43 (96-98)			New Entry	Clinopyroxene	44.69	3.41	9.93	0.00	6.70	0.00	11.94	22.81	0.00	0.00			99.48	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	Leg 43 (96-98)			New Entry	Clinopyroxene	45.22	3.13	9.49	0.00	6.52	0.00	12.37	22.80	0.00	0.00			99.53	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	Leg 43 (96-98)			New Entry	Clinopyroxene	48.66	2.04	5.84	0.00	5.97	0.00	14.14	22.33	0.00	0.00			98.98	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	Leg 43 (96-98)			New Entry	Clinopyroxene	47.81	2.74	7.21	0.00	6.32	0.00	13.73	22.69	0.00	0.00			100.50	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	Leg 43 (96-98)			New Entry	Clinopyroxene	47.70	2.47	7.03	0.00	6.23	0.00	13.54	22.46	0.00	0.00			99.43	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	Leg 43 (96-98)			New Entry	Clinopyroxene	43.63	4.20	10.79	0.00	7.03	0.00	11.47	22.60	0.08	0.00			99.80	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	Leg 43 (96-98)			New Entry	Clinopyroxene	49.10	2.01	5.28	0.00	6.10	0.00	14.53	22.28	0.00	0.00			99.30	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	Leg 43 (96-98)			New Entry	Clinopyroxene	46.10	3.83	7.58	0.00	6.65	0.00	13.00	22.98	0.00	0.00			100.14	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	Leg 43 (96-98)			New Entry	Clinopyroxene	41.02	5.94	11.29	0.00	8.07	0.00	10.30	22.85	0.00	0.00			99.47	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	Leg 43 (96-98)			New Entry	Clinopyroxene	47.01	2.99	6.47	0.00	7.08	0.00	13.11	22.55	0.00	0.00			99.21	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	Leg 43 (96-98)			New Entry	Clinopyroxene	41.98	5.34	10.57	0.00	7.65	0.00	10.59	22.90	0.00	0.00			99.03	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	Leg 43 (96-98)			New Entry	Clinopyroxene	46.94	3.20	6.21	0.00	7.16	0.06	13.14	22.69	0.00	0.00			99.40	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	Leg 43 (96-98)			New Entry	Clinopyroxene	46.38	2.90	8.64	0.00	7.18	0.00	12.67	22.36	0.10	0.00			100.23	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	Leg 43 (96-98)			New Entry	Clinopyroxene	42.60	5.01	10.71	0.00	8.07	0.00	10.96	22.91	0.16	0.00			100.42	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	Leg 43 (96-98)			New Entry	Clinopyroxene	40.89	5.62	11.51	0.00	8.51	0.00	10.20	22.90	0.00	0.00			99.63	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	Leg 43 (96-98)			New Entry	Clinopyroxene	41.92	5.72	11.13	0.00	8.27	0.12	10.81	23.05	0.29	0.00			101.31	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**H**	**16**	New Entry	Clinopyroxene	45.77	3.04	7.93	0.00	7.11	0.00	12.48	22.29	0.00	0.00			98.63	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**G**	**1**	New Entry	Clinopyroxene	46.42	2.46	8.68	0.00	6.96	0.00	12.27	22.03	0.44	0.00			99.26	

Table 3-3. Electron microprobe chemical analyses of olivine, amphibole, clinopyroxene, K-feldspar and opaques from New England Seamounts.

Location	Cruise	Site	Depth (cm)	Rock Lithology	Sample[1] (pts)	Figure[2]	Position[3]	File*	Mineral	SiO_2	TiO_2	Al_2O_3	Cr_2O_3	FeO	MnO	MgO	CaO	Na_2O	K_2O	P_2O_5	V_2O_5	Total	Notes
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**G**	**2**	New Entry	Clinopyroxene	45.76	2.76	8.90	0.00	6.68	0.00	12.25	22.11	0.29	0.00			98.75	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**G**	**3**	New Entry	Clinopyroxene	49.07	1.91	5.81	0.00	4.74	0.00	14.58	22.94	0.00	0.81			99.87	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**G**	**4**	New Entry	Clinopyroxene	47.85	2.86	5.98	0.00	5.82	0.00	13.98	23.29	0.00	0.25			100.03	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**G**	**5**	New Entry	Clinopyroxene	48.13	2.18	7.16	0.00	5.98	0.00	13.53	22.00	0.21	0.00			99.19	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**G**	**6**	New Entry	Clinopyroxene	49.39	1.92	6.20	0.00	5.77	0.00	14.72	21.94	0.00	0.05			99.98	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**G**	**7**	New Entry	Clinopyroxene	49.16	2.05	6.52	0.00	5.89	0.00	14.30	21.86	0.05	0.00			99.82	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**G**	**8**	New Entry	Clinopyroxene	49.57	1.85	6.11	0.00	5.71	0.00	14.32	21.80	0.09	0.00			99.46	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**G**	**9**	New Entry	Clinopyroxene	47.79	2.38	7.15	0.00	6.27	0.00	13.27	22.41	0.00	0.11			99.39	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**G**	**10**	New Entry	Clinopyroxene	44.69	3.41	9.93	0.00	6.70	0.00	11.94	22.81	0.00	0.08			99.57	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**G**	**11**	New Entry	Clinopyroxene	45.22	3.13	9.49	0.00	6.52	0.00	12.37	22.80	0.00	0.30			99.83	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**G**	**12**	New Entry	Clinopyroxene	48.66	2.04	5.84	0.00	5.97	0.00	14.14	22.33	0.00	0.17			99.15	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**G**	**13**	New Entry	Clinopyroxene	47.81	2.74	7.21	0.00	6.32	0.00	13.73	22.69	0.00	0.13			100.63	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**G**	**14**	New Entry	Clinopyroxene	47.70	2.47	7.03	0.00	6.23	0.00	13.54	22.46	0.00	0.08			99.51	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**G**	**15**	New Entry	Clinopyroxene	43.63	4.20	10.79	0.00	7.03	0.00	11.47	22.60	0.08	0.05			99.84	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**G**	**16**	New Entry	Clinopyroxene	49.10	2.01	5.28	0.00	6.10	0.00	14.53	22.28	0.00	0.22			99.52	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**G**	**17**	New Entry	Clinopyroxene	46.10	3.83	7.58	0.00	6.65	0.00	13.00	22.98	0.00	0.18			100.32	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**G**	**18**	New Entry	Clinopyroxene	41.02	5.94	11.29	0.00	8.07	0.00	10.30	22.85	0.00	0.00			99.47	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**G**	**19**	New Entry	Clinopyroxene	47.01	2.99	6.47	0.00	7.08	0.00	13.11	22.55	0.00	0.00			99.21	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**G**	**20**	New Entry	Clinopyroxene	41.98	5.34	10.57	0.00	7.65	0.00	10.59	22.90	0.00	0.00			99.03	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**G**	**21**	New Entry	Clinopyroxene	46.94	3.20	6.21	0.00	7.16	0.06	13.14	22.69	0.00	0.00			99.41	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**G**	**22**	New Entry	Clinopyroxene	46.38	2.90	8.64	0.00	7.18	0.00	12.67	22.36	0.10	0.18			100.40	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**G**	**23**	New Entry	Clinopyroxene	42.60	5.01	10.71	0.00	8.07	0.00	10.96	22.91	0.16	0.00			100.43	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**G**	**24**	New Entry	Clinopyroxene	40.89	5.62	11.51	0.00	8.51	0.00	10.20	22.90	0.00	0.00			99.63	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**G**	**25**	New Entry	Clinopyroxene	41.92	5.72	11.13	0.00	8.27	0.12	10.81	23.05	0.29	0.10			101.65	
N. E. S.	DSDP Leg 43	382-25-2	96-98	Hyaloclastite	**Leg 43 (96-98)**	**G**	**26**	New Entry	Magnetite	0.00	14.76	11.54	0.00	63.33	0.36	8.14	0.06	0.00	0.30		0.53	99.29	
N. E. S.	DSDP Leg 43	382-25-2	105-107	Basanite in hyaloclastite clast	**Leg 43 (105-107)**	**E**	**9**	New Entry	Magnetite	0.00	16.32	9.51	3.00	59.05	0.39	9.04	0.17	0.00	0.00			97.48	
N. E. S.	DSDP Leg 43	382-25-2	105-107	Basanite in hyaloclastite clast	Leg 43 (105-107)			New Entry	Olivine	40.41	0.00	0.00	0.00	12.88	0.08	46.48	0.26	0.00	0.00			100.11	in hyaloclastite
N. E. S.	DSDP Leg 43	382-25-2	105-107	Basanite in hyaloclastite clast	**Leg 43 (105-107)**	**E**	**8**	New Entry	Kaersutite	40.96	5.17	13.05	0.45	7.02	0.00	15.03	11.82	1.99	1.22			96.71	amphibole
N. E. S.	DSDP Leg 43	382-25-2	105-107	Basanite in hyaloclastite clast	**Leg 43 (105-107)**	**E**	**1**	New Entry	Clinopyroxene	48.14	2.03	6.83	0.00	7.38	0.00	12.96	21.96	0.25	0.00			99.55	
N. E. S.	DSDP Leg 43	382-25-2	105-107	Basanite in hyaloclastite clast	**Leg 43 (105-107)**	**E**	**2**	New Entry	Clinopyroxene	47.54	1.95	6.72	0.00	7.57	0.05	12.65	21.98	0.33	0.00			98.79	
N. E. S.	DSDP Leg 43	382-25-2	105-107	Basanite in hyaloclastite clast	**Leg 43 (105-107)**	**E**	**3**	New Entry	Clinopyroxene	45.30	2.91	9.10	0.00	8.82	0.04	10.10	22.14	0.84	0.00			99.25	
N. E. S.	DSDP Leg 43	382-25-2	105-107	Basanite in hyaloclastite clast	**Leg 43 (105-107)**	**E**	**4**	New Entry	Clinopyroxene	49.32	1.73	4.71	0.50	4.65	0.00	14.62	22.71	0.00	0.00			98.24	
N. E. S.	DSDP Leg 43	382-25-2	105-107	Basanite in hyaloclastite clast	**Leg 43 (105-107)**	**E**	**5**	New Entry	Clinopyroxene	43.09	4.74	9.28	0.05	6.50	0.00	11.56	23.01	0.00	0.00			98.23	
N. E. S.	DSDP Leg 43	382-25-2	105-107	Basanite in hyaloclastite clast	**Leg 43 (105-107)**	**E**	**6**	New Entry	Clinopyroxene	42.11	5.33	10.51	0.00	7.86	0.00	10.54	22.68	0.00	0.00			99.03	
N. E. S.	DSDP Leg 43	382-25-2	105-107	Basanite in hyaloclastite clast	**Leg 43 (105-107)**	**E**	**7**	New Entry	Clinopyroxene	48.65	1.80	6.32	0.00	7.50	0.05	13.31	21.81	0.22	0.00			99.66	
N. E. S.	DSDP Leg 43	382-25-2	105-107	Basanite in hyaloclastite clast	**Leg 43 (105-107)**	**E**	**10**	New Entry	Clinopyroxene	44.43	3.28	9.34	0.00	9.26	0.00	9.87	22.21	0.60	0.00			98.99	
N. E. S.	DSDP Leg 43	382-25-2	105-107	Basanite in hyaloclastite clast	**Leg 43 (105-107)**	**E**	**11**	New Entry	Clinopyroxene	49.06	1.84	5.21	0.80	4.65	0.00	14.71	22.47	0.00	0.00			98.74	
N. E. S.	DSDP Leg 43	382-25-2	105-107	Basanite in hyaloclastite clast	**Leg 43 (105-107)**	**E**	**12**	New Entry	Clinopyroxene	41.64	5.56	10.54	0.00	7.43	0.00	10.64	22.46	0.00	0.00			98.27	
N. E. S.	DSDP Leg 43	382-25-2	105-107	Basanite in hyaloclastite clast	**Leg 43 (105-107)**	**F**	**15**	New Entry	Clinopyroxene	43.23	4.26	14.61	0.00	10.74	0.00	5.82	13.01	3.14	2.19			97.00	
N. E. S.	DSDP Leg 43	382-25-2	105-107	Basanite in hyaloclastite clast	**Leg 43 (105-107)**	**E**	**16**	New Entry	Clinopyroxene	46.47	2.35	8.04	0.00	7.40	0.00	12.19	21.45	0.47	0.00			98.37	
N. E. S.	DSDP Leg 43	382-25-2	105-107	Basanite in hyaloclastite clast	**Leg 43 (105-107)**	**E**	**17**	New Entry	Clinopyroxene	39.48	6.51	11.79	0.00	8.46	0.00	9.66	22.78	0.00	0.00			98.68	
N. E. S.	DSDP Leg 43	382-25-2	105-107	Basanite in hyaloclastite clast	**Leg 43 (105-107)**	**E**	**18**	New Entry	Clinopyroxene	44.46	3.90	7.46	0.00	7.98	0.00	12.17	22.55	0.00	0.00			98.52	
N. E. S.	DSDP Leg 43	382-25-2	105-107	Basanite in hyaloclastite clast	**Leg 43 (105-107)**	**E**	**19**	New Entry	Clinopyroxene	46.75	2.91	6.27	0.14	6.44	0.04	13.61	22.39	0.00	0.00			98.55	
N. E. S.	DSDP Leg 43	382-25-2	105-107	Basanite in hyaloclastite clast	**Leg 43 (105-107)**	**E**	**20**	New Entry	Clinopyroxene	47.05	2.81	6.30	0.08	6.65	0.00	13.30	23.00	0.00	0.00			99.19	
N. E. S.	DSDP Leg 43	382-25-2	105-107	Basanite in hyaloclastite clast	**Leg 43 (105-107)**	**E**	**21**	New Entry	Clinopyroxene	40.53	6.19	11.79	0.00	7.87	0.00	10.04	22.56	0.00	0.00			98.98	
N. E. S.	DSDP Leg 43	382-25-2	105-107	Basanite in hyaloclastite clast	**Leg 43 (105-107)**	**E**	**26**	New Entry	Clinopyroxene	48.21	1.64	6.48	0.73	5.05	0.00	14.36	21.34	0.12	0.00			97.93	
N. E. S.	DSDP Leg 43	382-25-2	105-107	Basanite in hyaloclastite clast	Leg 43 (105-107)			New Entry	Clinopyroxene	49.45	0.00	5.44	0.00	0.85	0.00	25.05	0.65	0.83	0.62			82.89	
N. E. S.	DSDP Leg 43	382-25-2	105-107	Basanite in hyaloclastite clast	**Leg 43 (105-107)**	**J**	**1**	PX3	Clinopyroxene	46.54	3.31	8.32	0.12	6.55	0.00	13.24	22.77	0.18	0.00			101.03	brown, rim
N. E. S.	DSDP Leg 43	382-25-2	105-107	Basanite in hyaloclastite clast	**Leg 43 (105-107)**	**J**	**2**	PX3	Clinopyroxene	42.22	4.79	12.33	0.15	6.46	0.00	11.16	22.84	0.10	0.00			100.05	brown, rim
N. E. S.	DSDP Leg 43	382-25-2	105-107	Basanite in hyaloclastite clast	**Leg 43 (105-107)**	**J**	**3**	PX3	Clinopyroxene	44.41	2.77	11.42	0.00	9.35	0.00	10.01	22.19	0.77	0.00			100.92	ph, green, core
N. E. S.	DSDP Leg 43	382-25-2	105-107	Basanite in hyaloclastite clast	**Leg 43 (105-107)**	**J**	**5**	PX3	Clinopyroxene	48.02	1.80	6.83	0.73	4.76	0.00	14.21	22.74	0.16	0.00			99.25	colourless
N. E. S.	DSDP Leg 43	382-25-2	105-107	Basanite in hyaloclastite clast	**Leg 43 (105-107)**	**J**	**6**	PX3	Clinopyroxene	46.06	2.89	9.23	0.43	5.46	0.00	12.89	23.08	0.00	0.00			100.04	ph, colourless, rim
N. E. S.	DSDP Leg 43	382-25-2	105-107	Basanite in hyaloclastite clast	**Leg 43 (105-107)**	**J**	**7**	PX3	Clinopyroxene	47.01	2.52	8.70	1.01	4.77	0.00	13.38	22.73	0.00	0.00			100.12	ph, colourless, core
N. E. S.	DSDP Leg 43	382-25-2	105-107	Basanite in hyaloclastite clast	**Leg 43 (105-107)**	**J**	**8**	PX3	Clinopyroxene	41.76	5.16	13.21	0.00	6.75	0.00	10.81	22.92	0.31	0.00			100.92	ph, brown, inter

Table 3-3. Electron microprobe chemical analyses of olivine, amphibole, clinopyroxene, K-feldspar and opaques from New England Seamounts.

Location	Cruise	Site	Depth (cm)	Rock Lithology	Sample[1] (pts)	Figure[2]	Position[3]	File*	Mineral	SiO_2	TiO_2	Al_2O_3	Cr_2O_3	FeO	MnO	MgO	CaO	Na_2O	K_2O	P_2O_5	V_2O_5	Total	Notes
N. E. S.	DSDP Leg 43	382-25-2	105-107	Basanite in hyaloclastite clast	**Leg 43 (105-107)**	**J**	**9**	PX3	Clinopyroxene	40.84	5.60	13.07	0.00	7.75	0.00	10.15	22.71	0.35	0.00			100.47	ph, brown, rim
N. E. S.	DSDP Leg 43	382-25-2	105-107	Basanite in hyaloclastite clast	**Leg 43 (105-107)**	**J**	**10**	PX3	Clinopyroxene	47.70	1.88	7.57	0.73	4.82	0.00	13.72	21.40	0.26	0.00			98.08	ph, green, core
N. E. S.	DSDP Leg 43	382-25-2	105-107	Basanite in hyaloclastite clast	**Leg 43 (105-107)**	**J**	**11**	PX3	Clinopyroxene	44.40	2.84	11.11	0.00	9.28	0.00	9.78	22.19	0.90	0.00			100.50	ph, green, inter
N. E. S.	DSDP Leg 43	382-25-2	105-107	Basanite in hyaloclastite clast	**Leg 43 (105-107)**	**J**	**12**	PX3	Clinopyroxene	47.83	2.49	6.89	0.13	5.50	0.00	13.77	23.03	0.00	0.00			99.64	ph, colourless, rim
N. E. S.	DSDP Leg 43	382-25-2	105-107	Basanite in hyaloclastite clast	**Leg 43 (105-107)**	**J**	**13**	PX3	Clinopyroxene	42.46	4.80	12.65	0.00	7.01	0.00	10.98	22.98	0.15	0.00			101.03	ph, brown, rim
N. E. S.	DSDP Leg 43	382-25-2	105-107	Basanite in hyaloclastite clast	**Leg 43 (105-107)**	**J**	**14**	PX3	Clinopyroxene	43.41	4.92	11.85	0.14	6.30	0.00	11.47	23.29	0.24	0.00			101.62	mph, brown, core
N. E. S.	DSDP Leg 43	382-25-2	105-107	Basanite in hyaloclastite clast	**Leg 43 (105-107)**	**J**	**15**	PX3	Clinopyroxene	46.62	3.38	8.19	0.00	7.00	0.00	12.86	22.86	0.08	0.00			100.99	mph, brown, core
N. E. S.	DSDP Leg 43	382-25-2	105-107	Basanite in hyaloclastite clast	**Leg 43 (105-107)**	**J**	**16**	PX3	Clinopyroxene	47.99	2.88	6.53	0.09	5.78	0.00	13.82	23.27	0.00	0.00			100.36	mph, colourless, core
N. E. S.	DSDP Leg 43	382-25-2	105-107	Basanite in hyaloclastite clast	**Leg 43 (105-107)**	**J**	**17**	PX3	Clinopyroxene	44.40	3.84	10.71	0.18	6.55	0.00	12.13	23.15	0.00	0.00			100.96	ph, brown, core
N. E. S.	DSDP Leg 43	382-25-2	105-107	Basanite in hyaloclastite clast	**Leg 43 (105-107)**	**J**	**18**	PX3	Clinopyroxene	47.08	3.33	7.97	0.00	6.30	0.00	13.07	22.94	0.00	0.00			100.69	ph, brown, rim
N. E. S.	DSDP Leg 43	382-25-2	105-107	Basanite in hyaloclastite clast	**Leg 43 (105-107)**	**J**	**20**	PX3	Clinopyroxene	47.55	2.63	7.76	0.00	6.84	0.00	13.36	22.39	0.12	0.00			100.65	ph, rim
N. E. S.	DSDP Leg 43	382-25-2	105-107	Basanite in hyaloclastite clast	**Leg 43 (105-107)**	**E**	**13**	New Entry	Glass	43.42	4.52	9.03	0.15	6.72	0.00	11.71	22.44	0.00	0.00			97.99	needles in hyaloclastite
N. E. S.	DSDP Leg 43	382-25-2	105-107	Basanite in hyaloclastite clast	**Leg 43 (105-107)**	**F**	**14**	New Entry	Glass	43.51	4.35	14.80	0.00	10.81	0.06	5.66	12.71	2.98	2.17			97.05	needles in hyaloclastite
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	**Leg 43 (107-109)**	**D**	**3**	New Entry	Olivine	40.05	0.00	0.00	0.00	20.50	0.27	41.28	0.21	0.00	0.00			102.31	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	Leg 43 (107-109)			New Entry	Clinopyroxene	47.74	1.91	6.62	0.00	7.05	0.00	13.11	21.80	0.16	0.00			98.39	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	Leg 43 (107-109)			New Entry	Clinopyroxene	45.54	2.67	8.70	0.00	7.38	0.00	11.94	22.05	0.15	0.00			98.43	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	Leg 43 (107-109)			New Entry	Clinopyroxene	45.84	2.71	8.98	0.00	7.58	0.00	12.13	22.22	0.10	0.00			99.56	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	Leg 43 (107-109)			New Entry	Clinopyroxene	39.48	6.35	12.37	0.00	8.07	0.00	9.77	22.66	0.00	0.00			98.70	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	Leg 43 (107-109)			New Entry	Clinopyroxene	39.04	6.47	13.16	0.00	8.53	0.00	9.41	22.21	0.07	0.00			98.89	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	Leg 43 (107-109)			New Entry	Clinopyroxene	45.43	2.84	9.21	0.00	7.58	0.00	11.81	22.09	0.12	0.00			99.08	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	Leg 43 (107-109)			New Entry	Clinopyroxene	44.01	3.44	9.93	0.00	7.18	0.00	11.16	22.21	0.18	0.00			98.11	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	Leg 43 (107-109)			New Entry	Clinopyroxene	45.23	2.94	8.94	0.00	7.80	0.00	11.49	22.08	0.24	0.00			98.72	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	Leg 43 (107-109)			New Entry	Clinopyroxene	49.05	2.17	5.29	0.00	4.87	0.00	14.55	23.02	0.00	0.46			99.41	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	Leg 43 (107-109)			New Entry	Clinopyroxene	45.35	3.00	9.12	0.00	7.79	0.00	11.40	22.27	0.30	0.00			99.23	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	Leg 43 (107-109)			New Entry	Clinopyroxene	44.42	3.16	9.28	0.00	8.80	0.00	10.68	22.02	0.23	0.00			98.59	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	Leg 43 (107-109)			New Entry	Clinopyroxene	47.95	2.23	6.61	0.00	4.95	0.00	14.04	22.73	0.00	0.69			99.20	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	Leg 43 (107-109)			New Entry	Clinopyroxene	48.80	2.01	5.35	0.00	4.73	0.00	14.68	22.95	0.00	0.70			99.22	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	Leg 43 (107-109)			New Entry	Clinopyroxene	44.47	4.11	8.49	0.00	6.26	0.00	12.08	22.78	0.00	0.15			98.34	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	Leg 43 (107-109)			New Entry	Clinopyroxene	47.54	2.99	5.84	0.00	5.86	0.00	13.48	22.81	0.00	0.00			98.52	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	Leg 43 (107-109)			New Entry	Clinopyroxene	47.09	2.95	5.92	0.00	5.80	0.00	13.55	23.04	0.00	0.05			98.40	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	Leg 43 (107-109)			New Entry	Clinopyroxene	45.10	2.82	9.42	0.00	6.44	0.00	12.32	22.04	0.00	0.07			98.21	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	Leg 43 (107-109)			New Entry	Clinopyroxene	39.75	5.80	11.87	0.00	8.06	0.00	10.05	22.43	0.00	0.00			97.96	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	Leg 43 (107-109)			New Entry	Clinopyroxene	40.26	6.26	11.42	0.00	7.99	0.00	10.09	22.65	0.00	0.00			98.67	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	Leg 43 (107-109)			New Entry	Clinopyroxene	46.22	3.46	6.66	0.00	7.75	0.00	12.87	22.41	0.00	0.00			99.37	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	**Leg 43 (107-109)**	**D**	**25**	New Entry	Clinopyroxene	42.72	4.78	10.11	0.07	8.10	0.00	10.88	22.71	0.00	0.00			99.37	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	**Leg 43 (107-109)**	**D**	**26**	New Entry	Clinopyroxene	44.77	3.38	7.12	0.00	8.93	0.00	11.56	22.77	0.00	0.00			98.53	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	Leg 43 (107-109)			New Entry	Clinopyroxene	45.75	2.95	9.54	0.00	6.60	0.00	12.38	21.97	0.13	0.00			99.32	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	Leg 43 (107-109)			New Entry	Clinopyroxene	39.59	6.10	12.28	0.00	8.07	0.00	9.80	22.64	0.00	0.00			98.48	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	Leg 43 (107-109)			New Entry	Clinopyroxene	48.98	1.84	5.40	0.00	4.81	0.15	14.17	22.91	0.45	0.00			98.71	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	Leg 43 (107-109)			New Entry	Clinopyroxene	46.06	2.57	7.89	0.00	5.08	0.14	12.72	23.05	0.55	0.00			98.06	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	Leg 43 (107-109)			New Entry	Clinopyroxene	44.90	2.83	9.55	0.00	7.29	0.19	11.34	22.53	0.79	0.00			99.42	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	**Leg 43 (107-109)**	**B**	**1**	PX3	Clinopyroxene	47.55	1.96	6.36	0.35	5.06	0.00	13.99	22.71	0.00	0.00			97.98	ph, colourless, rim
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	**Leg 43 (107-109)**	**B**	**2**	PX3	Clinopyroxene	43.37	3.07	10.40	0.00	7.72	0.00	10.83	22.05	0.46	0.00			97.90	ph, colourless, inter
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	**Leg 43 (107-109)**	**B**	**3**	PX3	Clinopyroxene	43.10	3.59	11.76	0.00	7.21	0.00	10.74	22.01	0.54	0.00			98.95	ph, colourless, core
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	**Leg 43 (107-109)**	**C**	**2**	PX3	Clinopyroxene	47.74	1.91	6.62	0.00	7.05	0.00	13.11	21.80	0.16	0.00			98.39	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	**Leg 43 (107-109)**	**C**	**5**	PX3	Clinopyroxene	45.54	2.67	8.70	0.00	7.38	0.00	11.94	22.05	0.15	0.00			98.43	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	**Leg 43 (107-109)**	**C**	**6**	PX3	Clinopyroxene	45.84	2.71	8.98	0.00	7.58	0.00	12.13	22.22	0.10	0.00			99.56	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	**Leg 43 (107-109)**	**C**	**7**	PX3	Clinopyroxene	39.48	6.35	12.37	0.00	8.07	0.00	9.77	22.66	0.00	0.00			98.70	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	**Leg 43 (107-109)**	**C**	**8**	PX3	Clinopyroxene	39.04	6.47	13.16	0.00	8.53	0.00	9.41	22.21	0.07	0.00			98.89	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	**Leg 43 (107-109)**	**C**	**9**	PX3	Clinopyroxene	45.43	2.84	9.21	0.00	7.58	0.00	11.81	22.09	0.12	0.00			99.08	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	**Leg 43 (107-109)**	**C**	**10**	PX3	Clinopyroxene	44.01	3.44	9.93	0.00	7.18	0.00	11.16	22.21	0.18	0.00			98.11	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	**Leg 43 (107-109)**	**C**	**11**	PX3	Clinopyroxene	45.23	2.94	8.94	0.00	7.80	0.00	11.49	22.08	0.24	0.00			98.72	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	**Leg 43 (107-109)**	**C**	**12**	PX3	Clinopyroxene	49.05	2.17	5.29	0.00	4.87	0.00	14.55	23.02	0.00	0.00			98.95	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	**Leg 43 (107-109)**	**C**	**13**	PX3	Clinopyroxene	45.35	3.00	9.12	0.00	7.79	0.00	11.40	22.27	0.30	0.00			99.23	

Table 3-3. Electron microprobe chemical analyses of olivine, amphibole, clinopyroxene, K-feldspar and opaques from New England Seamounts.

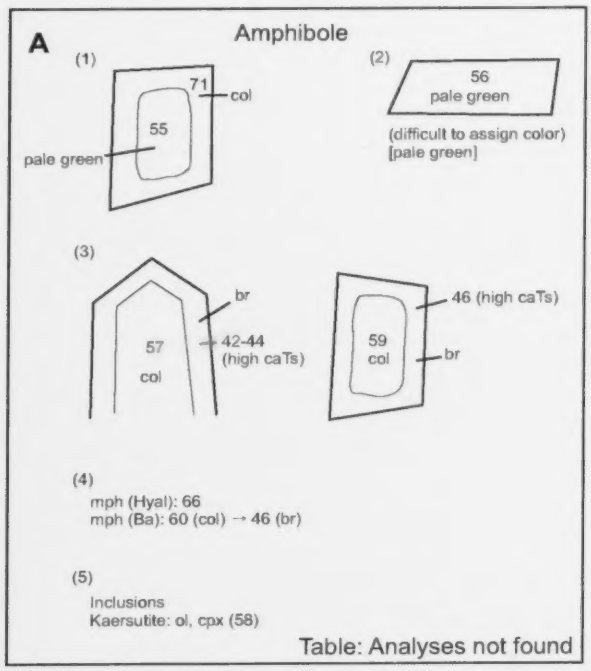
Location	Cruise	Site	Depth (cm)	Rock Lithology	Sample[1] (pts)	Figure[2]	Position[3]	File*	Mineral	SiO_2	TiO_2	Al_2O_3	Cr_2O_3	FeO	MnO	MgO	CaO	Na_2O	K_2O	P_2O_5	V_2O_5	Total	Notes
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	**Leg 43 (107-109)**	**C**	**14**	PX3	Clinopyroxene	44.42	3.16	9.28	0.00	8.80	0.00	10.68	22.02	0.23	0.00			98.59	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	**Leg 43 (107-109)**	**C**	**15**	PX3	Clinopyroxene	47.95	2.23	6.61	0.00	4.95	0.00	14.04	22.73	0.00	0.00			98.51	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	**Leg 43 (107-109)**	**C**	**16**	PX3	Clinopyroxene	48.80	2.01	5.35	0.00	4.73	0.00	14.68	22.95	0.00	0.00			98.52	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	**Leg 43 (107-109)**	**C**	**17**	PX3	Clinopyroxene	44.47	4.11	8.49	0.00	6.26	0.00	12.08	22.78	0.00	0.00			98.19	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	**Leg 43 (107-109)**	**C**	**18**	PX3	Clinopyroxene	47.54	2.99	5.84	0.00	5.86	0.00	13.48	22.81	0.00	0.00			98.52	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	**Leg 43 (107-109)**	**C**	**19**	PX3	Clinopyroxene	47.09	2.95	5.92	0.00	5.80	0.00	13.55	23.04	0.00	0.00			98.35	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	**Leg 43 (107-109)**	**C**	**20**	PX3	Clinopyroxene	45.10	2.82	9.42	0.00	6.44	0.00	12.32	22.04	0.00	0.00			98.14	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	**Leg 43 (107-109)**	**C**	**21**	PX3	Clinopyroxene	39.75	5.80	11.87	0.00	8.06	0.00	10.05	22.43	0.00	0.00			97.96	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	**Leg 43 (107-109)**	**C**	**22**	PX3	Clinopyroxene	40.26	6.26	11.42	0.00	7.99	0.00	10.09	22.65	0.00	0.00			98.67	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	**Leg 43 (107-109)**	**C**	**23**	PX3	Clinopyroxene	46.22	3.46	6.66	0.00	7.75	0.00	12.87	22.41	0.00	0.00			99.37	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	**Leg 43 (107-109)**	**D**	**4**	New Entry	Ti-Magnetite	0.00	15.22	9.29	0.31	65.64	0.19	7.19	0.00	0.00	0.00			97.84	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	**Leg 43 (107-109)**	**D**	**1**	New Entry	Mix	61.21	0.08	1.05	0.00	0.17	0.00	3.23	6.46	13.97	0.42			86.59	
N. E. S.	DSDP Leg 43	382-25-2	107-109	Hyaloclastite + Basanite	**Leg 43 (107-109)**	**D**	**24**	New Entry	Mix	50.95	0.26	32.14	0.00	0.65	0.00	0.00	14.32	3.66	0.33			102.31	
N. E. S.	DSDP Leg 43	385-23-1	?	Vesicular lava	Leg 43 (385)			New Entry	Clinopyroxene	48.73	2.16	5.42	0.00	6.56	0.00	13.93	22.48	0.00	0.08			99.36	
N. E. S.	DSDP Leg 43	385-23-1	?	Vesicular lava	Leg 43 (385)			New Entry	Clinopyroxene	49.62	1.87	4.44	0.00	5.50	0.00	14.89	22.85	0.00	0.06			99.23	
N. E. S.	DSDP Leg 43	385-23-1	?	Vesicular lava	Leg 43 (385)			New Entry	Clinopyroxene	50.42	1.53	3.83	0.00	5.52	0.00	15.24	22.54	0.00	0.15			99.23	
N. E. S.	DSDP Leg 43	385-23-1	97-99	Vesicular lava	**Leg 43 (97-99)**	**O**	**1**	New Entry	Clinopyroxene	47.63	2.59	6.44	0.00	8.11	0.00	12.63	21.86	0.21	0.00			99.47	
N. E. S.	DSDP Leg 43	385-23-1	97-99	Vesicular lava	**Leg 43 (97-99)**	**O**	**2**	New Entry	Clinopyroxene	48.08	2.14	6.11	0.00	8.14	0.00	12.46	22.14	0.29	0.00			99.36	
N. E. S.	DSDP Leg 43	385-23-1	97-99	Vesicular lava	**Leg 43 (97-99)**	**O**	**3**	New Entry	Clinopyroxene	47.98	2.55	6.46	0.00	6.70	0.00	13.57	22.53	0.00	0.00			99.79	
N. E. S.	DSDP Leg 43	385-23-1	97-99	Vesicular lava	**Leg 43 (97-99)**	**O**	**4**	New Entry	Clinopyroxene	48.54	2.18	4.20	0.00	6.86	0.00	14.29	22.47	0.00	0.00			98.54	
N. E. S.	DSDP Leg 43	385-23-1	97-99	Vesicular lava	**Leg 43 (97-99)**	**O**	**5**	New Entry	Clinopyroxene	46.49	3.05	7.42	0.00	6.61	0.00	12.92	22.83	0.00	0.00			99.32	
N. E. S.	DSDP Leg 43	385-23-1	97-99	Vesicular lava	**Leg 43 (97-99)**	**O**	**6**	New Entry	Clinopyroxene	48.09	2.58	5.95	0.00	6.28	0.00	13.77	22.80	0.00	0.00			99.47	
N. E. S.	DSDP Leg 43	385-23-1	97-99	Vesicular lava	**Leg 43 (97-99)**	**O**	**7**	New Entry	Clinopyroxene	48.64	1.91	5.46	0.00	7.98	0.06	13.32	22.01	0.18	0.00			99.56	
N. E. S.	DSDP Leg 43	385-23-1	97-99	Vesicular lava	**Leg 43 (97-99)**	**O**	**8**	New Entry	Clinopyroxene	49.31	1.84	5.21	0.00	6.65	0.00	14.11	22.00	0.00	0.00			99.12	
N. E. S.	DSDP Leg 43	385-23-1	97-99	Vesicular lava	**Leg 43 (97-99)**	**O**	**9**	New Entry	Clinopyroxene	50.16	1.65	3.83	0.00	5.60	0.00	14.89	22.30	0.00	0.00			98.43	
N. E. S.	DSDP Leg 43	385-23-1	97-99	Vesicular lava	**Leg 43 (97-99)**	**O**	**10**	New Entry	Clinopyroxene	50.11	1.50	3..37	0.00	5.88	0.00	15.25	22.03	0.00	0.00			94.77	
N. E. S.	DSDP Leg 43	385-23-1	97-99	Vesicular lava	**Leg 43 (97-99)**	**O**	**11**	New Entry	Clinopyroxene	48.73	2.16	5.42	0.00	6.56	0.00	13.93	22.48	0.00	0.00			99.28	
N. E. S.	DSDP Leg 43	385-23-1	97-99	Vesicular lava	**Leg 43 (97-99)**	**O**	**14**	New Entry	Clinopyroxene	49.62	1.87	4.44	0.00	5.50	0.00	14.89	22.85	0.00	0.00			99.17	
N. E. S.	DSDP Leg 43	385-23-1	97-99	Vesicular lava	**Leg 43 (97-99)**	**O**	**15**	New Entry	Clinopyroxene	50.42	1.53	3.83	0.00	5.52	0.00	15.24	22.54	0.00	0.00			99.08	
N. E. S.	DSDP Leg 43	385-23-1	97-99	Vesicular lava	**Leg 43 (97-99)**	**O**	**13**	New Entry	K-Feldspar	64.25	0.24	18.71	0.00	0.17	0.00	0.00	0.65	0.38	16.39			101.42	
N. E. S.	DSDP Leg 43	385-23-1	97-99	Vesicular lava	**Leg 43 (97-99)**	**O**	**17**	New Entry	K-Feldspar	63.18	0.24	18.71	0.00	0.59	0.00	0.00	0.34	0.00	16.91			99.96	
N. E. S.	DSDP Leg 43		?	?	DSDP382			New Entry	Clinopyroxene	47.98	5.42	2.80	0.00	6.35	0.17	16.43	19.99	0.41	0.08			99.63	
N. E. S.	DSDP Leg 43		?	?	DSDP382			New Entry	Clinopyroxene	54.09	0.28	1.57	1.10	3.96	0.09	18.89	18.84	1.37	0.15			100.34	
N. E. S.	DSDP Leg 43		?	?	DSDP382			New Entry	Clinopyroxene	49.50	1.99	5.16	0.05	8.80	0.11	13.60	20.50	0.34	0.00			100.05	
N. E. S.	DSDP Leg 43		?	Vesicular lava	DSDP382			PX2	Clinopyroxene	48.02	5.40	2.97	0.00	6.44	0.15	16.51	19.65	0.39	0.00			99.53	
N. E. S.	DSDP Leg 43		?	Vesicular lava	DSDP382			PX2	Clinopyroxene	52.10	0.86	3.11	0.44	8.91	0.21	21.91	11.80	0.24	0.00			99.58	
N. E. S.	DSDP Leg 43		?	Vesicular lava	DSDP382			PX2	Clinopyroxene	51.30	0.60	3.95	1.09	10.27	0.18	21.00	10.48	0.33	0.00			99.20	

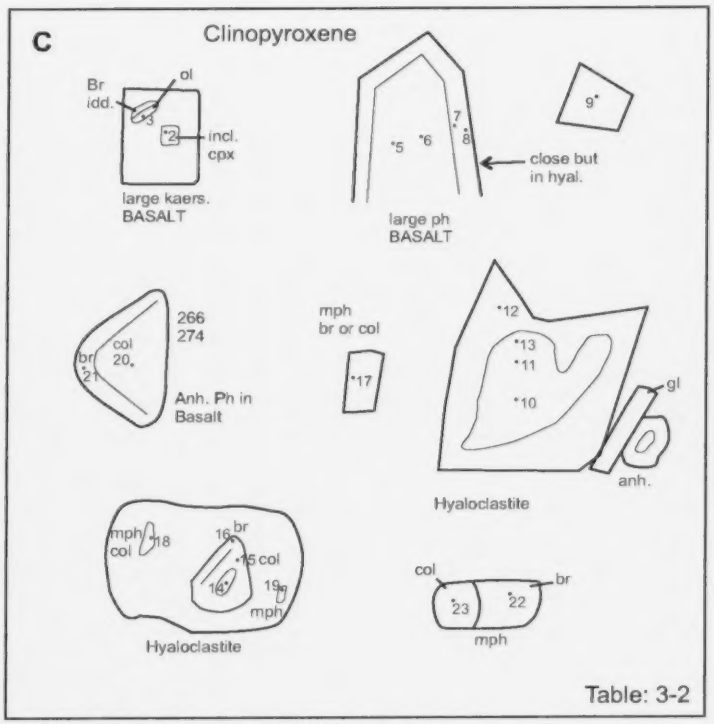
[1,2,3] the highlighting indicates mineral analyses that have supplementary sketches at the end of the table. 1 = analysis sample name 2 = figure label where sketch is located 3 = position of analysis in mineral crystal/grain

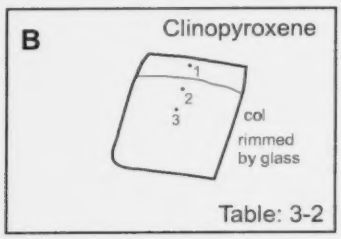
* all data can be found under Archiving - Minfiles - **File*** *name* **pts** = polished thin section ph = phenocryst, mph = microphenocryst, aggr = aggregates, inter = interstitial

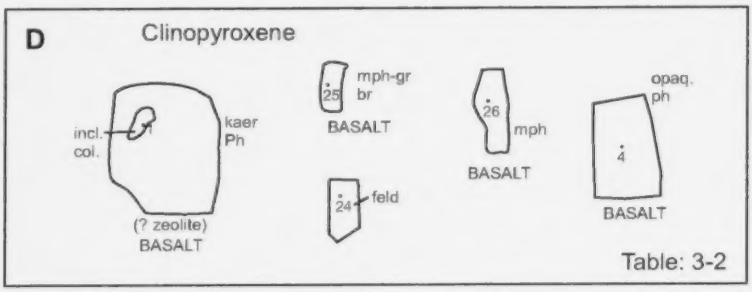
Sketches for selected analyses in Table 3-3.

Leg 43 352-25-2 (107-109cm)

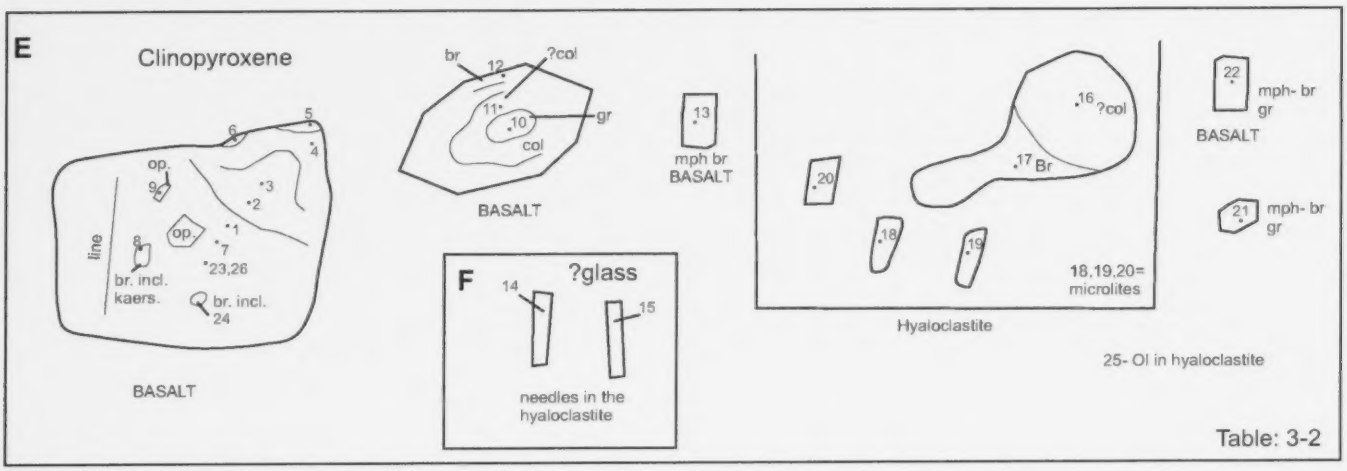






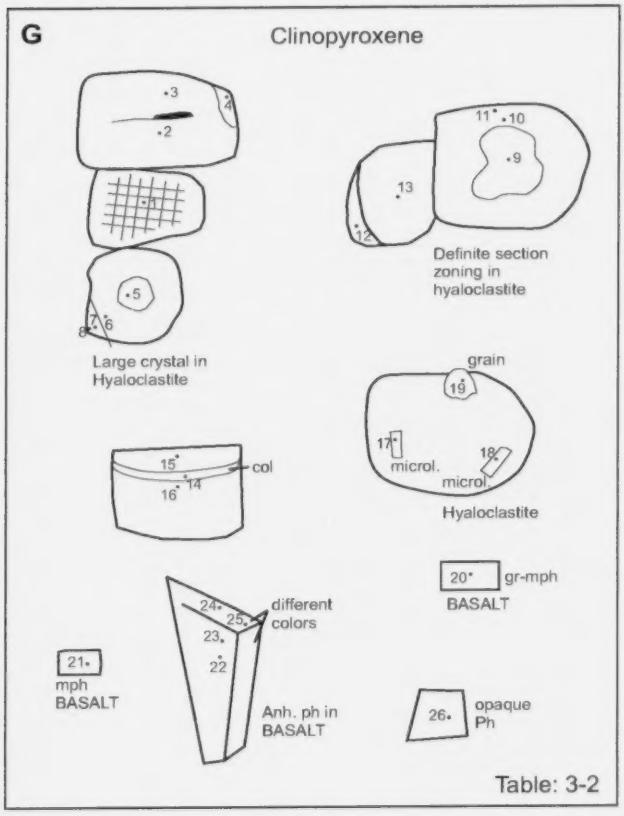


Leg 43 382-25-2 (105-107cm)

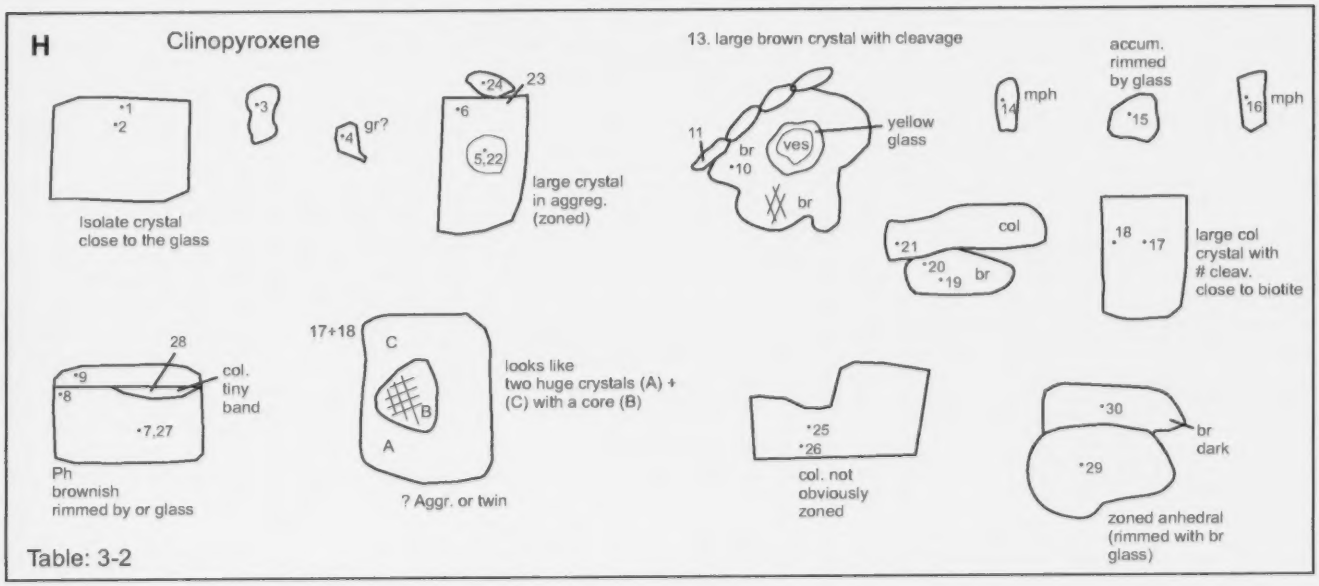


Sketches for selected analyses in Table 3-3.

Leg 43 382-52-2 (96-98cm)

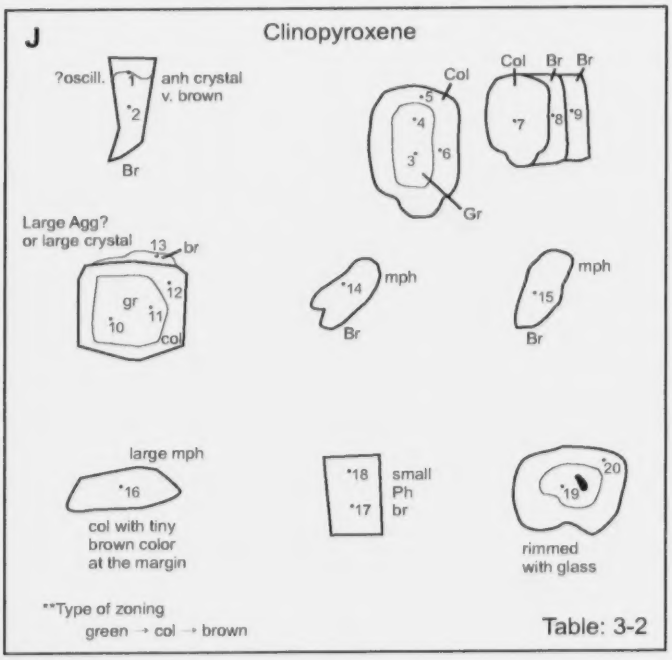


Leg 43 382-25-2 (96-98cm)

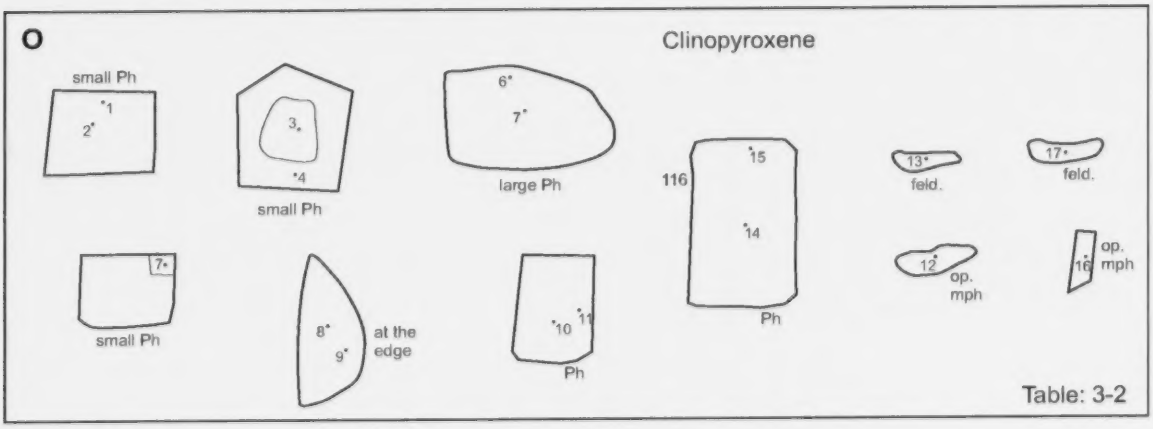


Sketches for selected analyses in Table 3-3.

Leg 43 382-25-2 (105-107cm)



Leg 43 385-23-1 (97-99ft)



Appendix 4: Triassic and Paleozoic rocks, Canadian continental margin

Table 4. Electron microprobe chemical analyses of minerals from various wells during Devonian to early Mesozoic.

Well	Depth (Top)	Sample[1] (pts)	Analyses No.	Mineral	File	SiO_2	TiO_2	Al_2O_3	Cr_2O_3	FeO	MnO	MgO	CaO	Na_2O	K_2O	BaO	P_2O_5	Total	Notes
Cormorant N-83	9780	COR9780	1	Albite	New Entry	67.99	0.00	19.55		0.00		0.00	0.05	12.05	0.06			99.70	
Cormorant N-83	9780	COR9780	2	Plagioclase	New Entry	57.60	0.00	25.89		0.56		0.00	8.77	5.74	0.53			99.09	
Cormorant N-83	9780	COR9780	3	Plagioclase	New Entry	58.85	0.05	25.58		0.78		0.00	7.96	6.91	0.25			100.38	
Cormorant N-83	9780	COR9780	4	K-feldspar	New Entry	65.98	0.00	18.82		0.54		0.62	0.11	7.82	5.46			99.35	
Spoonbill C-30	8467	SPO8467	1	Clinopyroxene	New Entry	53.39	0.19	1.17		7.59	0.06	19.10	18.10	0.00	0.00			99.60	
Spoonbill C-30	8467	SPO8467	3	Clinopyroxene	New Entry	52.03	0.41	2.21		7.82	0.08	18.02	18.34	0.22	0.00			99.13	
Spoonbill C-30	8467	SPO8467	4R	Clinopyroxene	New Entry	52.65	0.27	1.33		8.97	0.21	18.48	17.39	0.00	0.00			99.30	
Spoonbill C-30	8467	SPO8467	5	Clinopyroxene	New Entry	53.02	0.21	1.12		8.02		18.37	18.40	0.00	0.00			99.14	
Glooscap C-63	4551	Glooscap 4551-1	1	Clinopyroxene	New Entry	53.06	0.32	1.83	0.18	8.41	0.09	17.49	18.44	0.00	0.00			99.82	
Glooscap C-63	4551	Glooscap 4551-2	2	Clinopyroxene	New Entry	51.89	0.47	1.56	0.00	12.22	0.20	15.65	17.67	0.00	0.00			99.66	
Mohawk B-93	6970	MO6970-6975		K-Feldspar	New Entry	64.19	0.00	18.60		0.09	0.00	0.00	0.00	0.00	17.09	0.48		100.45	
Mohawk B-93	6970	MO6970-6975		K-Feldspar	New Entry	64.84	0.00	18.84		0.23	0.00	0.00	0.00	0.12	17.01	0.47		101.51	
Mohawk B-93	6970	MO6970-6975		K-Feldspar	New Entry	63.47	0.00	18.94		0.00	0.00	0.00	0.00	0.12	16.63	1.01		100.17	
Mohawk B-93	6970	MO6970-6975		K-Feldspar	New Entry	64.44	0.00	18.69		0.00	0.00	0.00	0.00	1.31	15.43	0.12		99.99	
Mohawk B-93	6970	MO6970-6975		Albite	New Entry	67.30	0.00	20.22		0.19	0.00	0.00	0.86	11.25	0.29			100.11	
Mohawk B-93	6970	MO6970-6975		Albite	New Entry	67.74	0.00	20.09		0.13	0.00	0.00	0.74	11.04	0.09			99.83	
Mohawk B-93	6970	MO6970-6975		Oligoclase	New Entry	62.83	0.10	24.13		0.12	0.04	0.00	5.16	8.85	0.26			101.49	
Mohawk B-93	6920	MO6920		Biotite	New Entry	42.88	1.67	19.29		14.89	0.24	10.03	0.11	0.07	6.73			95.91	
Mohawk B-93	6940	MO6940		Amphibole	New Entry	44.29	1.08	9.27		19.75	0.49	9.09	11.98	1.23	1.09			98.27	
Mohawk B-93	6940	MO6940		Biotite	New Entry	37.08	2.40	15.81		18.29	0.29	11.75	0.00	0.01	9.83			95.46	
Mohawk B-93	6941	MO6941		Amphibole	New Entry	42.23	1.03	10.10		20.28	0.48	8.50	11.82	1.38	1.34			97.16	
Ojibwa E-07	7500	OJI7500		Biotite	New Entry	37.10	1.52	16.55		20.20	0.36	10.03	0.01	0.06	10.05			95.88	
Ojibwa E-07	7500	OJI7500		Biotite	New Entry	36.46	1.51	16.63		20.68	0.39	9.76	0.00	0.02	9.54			94.99	
Northumberland Strait F-25	8862	FIN8862	1	Clinopyroxene	PX2	50.55	1.55	1.23	0.00	11.19	0.22	13.52	20.03	0.25	0.00			98.54	
Northumberland Strait F-25	8862	FIN8862	2	Clinopyroxene	PX2	50.16	1.78	3.10	0.12	9.37	0.21	14.05	20.86	0.36	0.00			100.01	
Northumberland Strait F-25	8862	FIN8862	5	Clinopyroxene	PX2	49.26	2.08	3.31	0.18	10.14	0.15	13.62	20.43	0.42	0.00			99.59	
Northumberland Strait F-25	8862	FIN8862	6	Clinopyroxene	PX2	51.91	0.79	1.36	0.17	8.74	0.26	15.29	19.93	0.24	0.00			98.69	
Northumberland Strait F-25	8862	FIN8862	7	Clinopyroxene	PX2	49.69	1.66	3.06	0.00	9.18	0.17	13.61	20.86	0.33	0.00			98.56	
Northumberland Strait F-25	8862	FIN8862	8	Clinopyroxene	PX2	50.10	1.60	2.99	0.18	9.43	0.19	13.64	20.80	0.37	0.00			99.30	
Northumberland Strait F-25	8862	FIN8862	9	Clinopyroxene	PX2	48.95	2.16	3.49	0.11	10.28	0.33	13.22	20.44	0.47	0.00			99.45	
Northumberland Strait F-25	8862	FIN8862	10	Clinopyroxene	PX2	49.53	1.98	2.97	0.10	9.90	0.19	13.66	20.99	0.33	0.00			99.65	
Northumberland Strait F-25	8862	FIN8862	13	Clinopyroxene	PX2	49.86	1.40	2.93	0.32	8.13	0.22	14.48	21.02	0.22	0.00			98.58	
Northumberland Strait F-25	8862	FIN8862	31	Clinopyroxene	PX2	48.07	2.73	3.21	0.00	11.54	0.22	12.29	20.00	0.49	0.00			98.55	
Northumberland Strait F-25	8862	FIN8862	32	Clinopyroxene	PX2	49.24	1.99	2.19	0.07	12.14	0.35	12.25	20.29	0.41	0.00			98.93	
Northumberland Strait F-25	8862	FIN8862	33	Clinopyroxene	PX2	48.61	2.40	2.92	0.08	11.48	0.24	12.18	20.59	0.45	0.00			98.95	
Northumberland Strait F-25	8862	FIN8862	34	Clinopyroxene	PX2	48.71	2.31	3.00	0.00	11.19	0.34	12.31	20.63	0.49	0.00			98.98	
Northumberland Strait F-25	8862	FIN8862	35	Clinopyroxene	PX2	48.01	2.58	3.42	0.07	11.82	0.32	12.49	20.13	0.64	0.00			99.48	
Northumberland Strait F-25	8893	FIN8893	1	Clinopyroxene	PX2	51.21	0.95	1.89	0.37	9.42	0.30	15.05	20.84	0.18	0.00			100.21	
Northumberland Strait F-25	8893	FIN8893	2	Clinopyroxene	PX2	49.61	1.71	2.94	0.17	10.66	0.18	13.19	21.43	0.29	0.00			100.18	
Northumberland Strait F-25	8893	FIN8893	3	Clinopyroxene	PX2	49.39	1.63	3.47	0.51	9.90	0.22	13.97	20.83	0.18	0.00			100.10	
Northumberland Strait F-25	8893	FIN8893	4	Clinopyroxene	PX2	49.46	1.89	3.04	0.26	11.17	0.29	12.84	21.12	0.35	0.00			100.42	
Northumberland Strait F-25	8893	FIN8893	5	Clinopyroxene	PX2	48.22	2.21	3.00	0.00	13.55	0.27	13.55	20.55	0.32	0.00			101.67	
Northumberland Strait F-25	8893	FIN8893	6	Clinopyroxene	PX2	48.21	2.09	4.11	0.70	9.46	0.21	13.14	21.60	0.43	0.00			99.95	
Northumberland Strait F-25	8893	FIN8893	7	Clinopyroxene	PX2	48.59	2.04	4.08	0.53	8.52	0.15	13.88	21.79	0.14	0.00			99.72	
Northumberland Strait F-25	8893	FIN8893	8	Clinopyroxene	PX2	49.32	1.71	3.79	0.52	9.18	0.27	13.53	21.56	0.34	0.00			100.22	
Northumberland Strait F-25	8893	FIN8893	10	Clinopyroxene	PX2	48.64	1.89	3.65	0.29	10.88	0.24	13.36	20.69	0.22	0.00			99.86	
Northumberland Strait F-25	8893	FIN8893	11	Clinopyroxene	PX2	49.29	1.66	3.59	0.37	9.56	0.21	13.66	21.34	0.16	0.00			99.84	

Table 4. Electron microprobe chemical analyses of minerals from various wells during Devonian to early Mesozoic.

Well	Depth (Top)	Sample[1] (pts)	Analyses No.	Mineral	File	SiO_2	TiO_2	Al_2O_3	Cr_2O_3	FeO	MnO	MgO	CaO	Na_2O	K_2O	BaO	P_2O_5	Total	Notes
Northumberland Strait F-25	8893	FIN8893	12	Clinopyroxene	PX2	48.76	1.82	3.54	0.31	10.60	0.23	13.44	21.02	0.34	0.00			100.06	
Northumberland Strait F-25	8893	FIN8893	13	Clinopyroxene	PX2	48.81	1.93	3.83	0.36	8.79	0.11	13.58	21.77	0.17	0.00			99.35	
Northumberland Strait F-25	8893	FIN8893	14	Clinopyroxene	PX2	49.31	1.79	3.11	0.22	11.04	0.32	13.24	20.97	0.35	0.00			100.35	
Northumberland Strait F-25	8893	FIN8893	15	Clinopyroxene	PX2	49.10	1.98	3.02	0.10	11.84	0.40	12.59	21.04	0.45	0.00			100.52	
Northumberland Strait F-25	8893	FIN8893	16	Clinopyroxene	PX2	48.72	1.84	3.44	0.29	10.89	0.16	13.24	20.88	0.18	0.00			99.64	
Northumberland Strait F-25	9450	FIN9450	6	Clinopyroxene	PX2	52.16	0.82	2.14	0.00	8.91	0.19	15.64	21.36	0.25	0.00			101.47	Lower unit
Northumberland Strait F-25	9450	FIN9450	7	Clinopyroxene	PX2	51.42	1.16	2.14	0.00	10.08	0.22	15.31	20.51	0.47	0.00			101.31	
Northumberland Strait F-25	9450	FIN9450	2	Clinopyroxene	PX2	54.59	0.16	28.13	0.00	1.18	0.00	0.23	11.10	4.76	0.00			100.15	
Northumberland Strait F-25	9450	FIN9450	3	Clinopyroxene	PX2	52.66	0.11	29.42	0.00	0.93	0.00	0.06	13.23	3.89	0.00			100.30	
Northumberland Strait F-25	9450	FIN9450	1	Clinopyroxene	PX2	50.83	1.07	2.97	0.13	8.97	0.24	15.39	21.00	0.34	0.00			100.94	
Northumberland Strait F-25	9450	FIN9450	5	Clinopyroxene	PX2	52.03	0.83	1.95	0.11	9.02	0.21	15.90	21.03	0.33	0.00			101.41	
Northumberland Strait F-25	9450	FIN9450	9	Clinopyroxene	PX2	52.59	0.90	1.73	0.06	8.97	0.24	16.02	21.00	0.38	0.00			101.89	
Crow F-52	4690	CRO4690		Biotite	New Entry	35.70	3.20	16.39		19.02	0.25	10.06	0.02	0.02	9.68			94.34	
Crow F-52	4880	CRO4880		Biotite	New Entry	35.74	2.96	17.86		20.66	0.46	7.25	0.00	0.12	9.77			94.82	
German Bank		14 (15-34)		Biotite	PX1	34.39	3.21	17.44		26.07	0.42	4.52	0.00	0.28	9.05			95.38	core
German Bank		14 (15-34)		Biotite	PX1	34.42	3.01	17.08		25.25	0.37	4.32	0.06	0.22	8.82			93.55	rim
German Bank		17 (11-25)		Biotite	PX1	35.61	2.47	16.69		25.40	0.39	6.16	0.00	0.22	9.48			96.42	core
German Bank		17 (11-25)		Biotite	PX1	35.57	2.55	16.37		25.02	0.55	6.19	0.00	0.29	9.39			95.93	rim
German Bank		20 (240-250)		Biotite	PX1	36.81	3.65	15.95		21.56	0.64	8.01	0.00	0.23	9.61			96.46	core
German Bank		20 (240-250)		Biotite	PX1	36.61	3.79	16.34		21.04	0.53	7.54	0.00	0.20	9.59			95.64	rim
German Bank		20 (73-92)		Biotite	PX1	37.02	1.72	15.47		19.74	0.27	10.68	0.09	0.17	9.09			94.25	core
German Bank		20 (73-92)		Biotite	PX1	37.19	1.61	15.89		19.98	0.29	10.96	0.00	0.25	9.22			95.39	rim
German Bank		20 (73-92)		Biotite	PX1	36.80	2.43	15.69		20.18	0.22	9.99	0.00	0.33	9.26			94.90	core
German Bank		20 (73-92)		Biotite	PX1	36.89	2.33	15.74		20.10	0.32	9.73	0.10	0.17	9.26			94.64	rim
Barrington Passage pluton		90-BP-Y20		Biotite	New Entry	36.89	2.40	16.13		20.26	0.34	9.88	0.00	0.20	9.23			95.33	core
Barrington Passage pluton		90-BP-Y20		Biotite	New Entry	36.87	2.38	16.08		20.72	0.30	10.07	0.00	0.30	9.15			95.87	rim
Barrington Passage pluton		90-BP-Y20		Biotite	New Entry	36.71	2.31	15.98		20.65	0.38	9.29	0.00	0.21	9.13			94.66	core
Barrington Passage pluton		90-BP-Y20		Biotite	New Entry	36.88	2.28	16.12		21.13	0.34	9.74	0.00	0.25	9.26			96.00	rim
Wedgeport pluton		90-WP-Y8B		Biotite	New Entry	36.30	1.26	16.33		26.39	0.67	4.70	0.00	0.30	9.29			95.24	core
Wedgeport pluton		90-WP-Y8B		Biotite	New Entry	36.40	1.23	16.79		26.16	0.57	4.58	0.12	0.25	8.68			94.78	rim
Wedgeport pluton		90-WP-Y8B		Biotite	New Entry	36.20	2.50	17.19		25.36	0.64	3.93	0.06	0.28	9.35			95.51	core
Wedgeport pluton		90-WP-Y8B		Biotite	New Entry	36.81	2.52	17.57		25.31	0.57	4.10	0.10	0.25	9.48			96.71	rim

* all data can be found under Archiving - Minfiles - **File*** *name* **pts** = polished thin section